

Results Summary

Database	Answers Exported	Answer Range
CAplus	55 of 55	1-55

Created from: L6 in Project "Untitled34"

Settings: Abbreviations=on; Plurals=on; Spelling=on; Apostrophe=on; Chemical Names=on; Diacritics=on; Hyphen=on; Cross File=off

Query: L6 (CAplus, REGISTRY)
L4 AND PD<20140915

Referenced Queries

L2
INCUBATION

L3
Beauveria bassiana

L4
L3 AND **L2**

CAplus Results**1. Spore production of entomopathogenic fungus *Beauveria bassiana* BNBCRC for biocontrol: Response surface optimization of medium using decanter cake from palm oil mill**

Author: Petlamul, Wanida; Prasertsan, Poonsuk
Corporate Source: Prince of Songkla University Department of Industrial Biotechnology, Faculty of Agro-Industry Songkhla 90112, Thailand (TH)
Source: Journal of the Korean Society for Applied Biological Chemistry (**20140430**), 57(2), pp. 201-208 *In English*
CODEN: JKSAAN
ISSN: 2234-344X
DOI: 10.1007/s13765-013-4175-5
Publisher: Korean Society for Applied Biological Chemistry, Seoul, Korea, Republic of (KR)
Document Type: Journal (Online Computer File)
Document ID: 2016:170525 (DN 164:470512)

Abstract

Beauveria bassiana is an efficient entomopathogenic fungus for biol. control. Optimization of medium compn. for prodn. of *B. bassiana* BNBCRC spores in decanter cake (DC)-based solid culture was performed using response surface methodol. (RSM). Effects of inorg. and org. nitrogen sources, mineral salt, and **incubation** temp. in a DC-based compn. were exptl. studied in two stages, first using a Taguchi design. Among the decision variables tested, urea, peptone, and MgSO_4 significantly affected the spore concn., and the maximal 1.89×10^8 spores g^{-1} was found at 30°C **incubation** temp. In the second stage, these three selected decision variables were optimized by RSM, using a factorial central composite design. The max. av. spore concn. of *B. bassiana* BNBCRC increased to 4.80×10^8 spores g^{-1} in the optimal DC-based medium contg. 0.80 g L^{-1} urea, 2.10 g L^{-1} peptone, and 0.75 g L^{-1} MgSO_4 . The coeff. of detn. was $R^2=0.97$ for the RSM model fit to data. Compared to the original DC-based medium, the performed optimization increased the spore prodn. of *B. bassiana* BNBCRC by 2.5 fold. After optimization of moisture content, the DC -based medium contg. 60% moisture gave the highest spore concn. of 4.71×10^8 spores g^{-1} .

Supplementary Terms: *Beauveria* spore biocontrol response surface methodol decanter cake

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing**Index Terms:**

10043-52-4, Calcium chloride

57-13-6, Urea

6484-52-2, Ammonium nitrate

7439-95-4, Magnesium

7440-09-7, Potassium

7704-34-9, Sulfur

7723-14-0, Phosphorus

7757-79-1, Potassium nitrate

7758-98-7, Copper sulfate

7785-87-7, Manganese sulfate

7786-30-3, Magnesium chloride

Biological Study (BIOL) Biological Study, Unclassified (BSU)

optimization of medium compn. based on decanter cake from palm oil mill using response surface methodol.

increased spore prodn. of entomopathogenic fungus **Beauveria bassiana** for biol. control

Beauveria bassiana

Beef meat extract

Biological pest control

Carbon sources, microbial

Growth, microbial

Mycelium

Nitrogen sources, microbial

pH

Response surface methodology

Skim milk

Solid state fermentation

Spore

Temperature effects, biological

Yeast extract

optimization of medium compn. based on decanter cake from palm oil mill using response surface methodol.

increased spore prodn. of entomopathogenic fungus **Beauveria bassiana** for biol. control

Peptones

Biological Study (BIOL) Biological Study, Unclassified (BSU)

optimization of medium compn. based on decanter cake from palm oil mill using response surface methodol.

increased spore prodn. of entomopathogenic fungus **Beauveria bassiana** for biol. control

Dates

Entered STN: 04 Feb 2016

Last Update: 18 Jul 2018

Bibliographic Update: 11 Feb 2016

Indexing Update: 18 Jul 2018

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2. Effect of process parameters on the enzyme activity of a novel **Beauveria bassiana isolate**

Author: Mishra, Sapna; Kumar, Peeyush; Malik, Anushree
Corporate Source: Indian Institute of Technology Delhi Applied Microbiology laboratory, Centre for Rural Development & Technology New Delhi 110 016, India (IN)
Source: International Journal of Current Microbiology and Applied Sciences (2013), 2(9), pp. 49-56
In English
CODEN: IJCMO9
ISSN: 2319-7706
URL: <http://www.ijcmas.com/vol-2-9/Sapna+Mishra,+et+al.pdf>
Publisher: IJCMAS Scientific Publishers, Tamilnadu, India (IN)
Document Type: Journal; Article (Online Computer File)
Document ID: 2015:353523

Abstract

Enzyme prodn. potential of a native *Beauveria bassiana* (HQ917687) isolate was elucidated through the assessment of effect of incubation period and temp. Evaluation of enzyme activity of fungal filtrate showed increase in activity with increase in incubation time. Maximum enzyme activity was obsd. on 5th day [chitinase (5.24 U/mL), Pr1 protease (4.66 U/mL), lipase (2.26 U/mL)] or 4th day [pr2 protease (5.48 U/mL)] of the culture growth. The enzymes showed variation in activity with temp., with max. chitinase (5.05 U/mL) and pr1 (4.31 U/mL) activity at 40 °C, whereas max. activity of pr2 was obsd. at 50 °C (4.52 U/mL). The optimum activity of enzyme was obsd. between pH 5-7, while beyond this range decrease in enzyme activity was obsd. with increase in medium acidity or alky. The results obtained from this study are expected to help in exptl. design and biotechnol. modification using particular strain of *B. bassiana*.

Indexing

Index Terms:

Dates

Entered STN: 03 Mar 2015
Last Update: 06 May 2017
Bibliographic Update: 06 May 2017

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3. A new enantioselective CE method for determination of oxcarbazepine and licarbazepine after fungal biotransformation

Author: Bocato, Mariana Zuccherato; Bortoleto, Marcela Armelim; Pupo, Monica Tallarico; Oliveira, Anderson Rodrigo Moraes
Corporate Source: Universidade de Sao Paulo Departamento de Ciencias Farmaceuticas Ribeirao Preto 14040-901, Brazil (BR)

Source: Electrophoresis (2014), 35(19), pp. 2877-2884 *In English*
CODEN: ELCTDN
ISSN: 0173-0835

DOI: 10.1002/elps.201400137

Publisher: Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany (DE)

Document Type: Journal

Document ID: 2014:1368549 (DN 161:671990)

Abstract

The present work describes, for the first time, the simultaneous sepn. of oxcarbazepine (OXC) and its active metabolite 10-hydroxy-10,11-dihydrocarbamazepine (licarbazepine, Lic) by chiral CE. The developed method was employed to monitor the enantioselective biotransformation of OXC into its active metabolite by fungi. The electrophoretic sepn. were performed using 10 mmol/L of a Tris-phosphate buffer soln. (pH 2.5) contg. 1% w/v of β -CD phosphate sodium salt (P- β -CD) as running electrolyte, -20 kV of applied voltage and a 15°C capillary temp. The method was linear over the concn. range of 1000-30 000 ng/mL for OXC and 75-900 ng/mL for each Lic enantiomer ($r \geq 0.9952$). Within-day precision and accuracy evaluated by RSD and relative errors, resp., were lower than 15% for all analytes. The validated method was used to evaluate the enantioselective biotransformation of OXC, mediated by fungi, into its active metabolite Lic. This study showed that the fungi *Glomerella cingulata* (VA1) and *Beuveria bassiana* were able to enantioselectively metabolize the OXC into Lic after 360 h of incubation. Biotransformation by the fungus *Beuveria bassiana* showed 79% enantiomeric excess for (S)-(+)-Lic, while VA1 gave an enantiomeric excess of 100% for (S)-(+)-Lic. This study opens a new route to the drug (S)-(+)-licarbazepine.

Supplementary Terms: oxcarbazepine fungal biotransformation licarbazepine enantiosepn capillary electrophoresis

Classification Codes

CA Section Code: Pharmaceutical Analysis (64)

Section cross-reference(s): 16

Indexing

Index Terms:

28721-07-5, Oxcarbazepine

Analyte (ANT) Analytical Study (ANST) Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)
new enantioselective CE method for detn. of oxcarbazepine and licarbazepine after fungal biotransformation

104746-03-4

Analyte (ANT) Analytical Study (ANST) Biological Study (BIOL) Biological Study, Unclassified (BSU)
new enantioselective CE method for detn. of oxcarbazepine and licarbazepine after fungal biotransformation

104746-04-5P, (S)-Licarbazepine

29331-92-8P, Licarbazepine

Analyte (ANT) Analytical Study (ANST) Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP)

new enantioselective CE method for detn. of oxcarbazepine and licarbazepine after fungal biotransformation

199684-61-2, Sodium β -Cyclodextrin phosphate

60120-39-0, β -Cyclodextrin sulfate

7585-39-9D, β -Cyclodextrin, carboxymethyl ethers

Analytical Role, Unclassified (ARU) Analytical Study (ANST)

new enantioselective CE method for detn. of oxcarbazepine and licarbazepine after fungal biotransformation

Beauveria bassiana

Biotransformation

Capillary electrophoresis

Fungi

Glomerella cingulata

Resolution (separation)

new enantioselective CE method for detn. of oxcarbazepine and licarbazepine after fungal biotransformation

Dates

Entered STN: 20 Aug 2014

Last Update: 14 Nov 2014

Bibliographic Update: 04 Oct 2014

Indexing Update: 14 Nov 2014

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4. Titanium dioxide nanoparticles as UV protectants for enhancing the survival of conidia of the entomopathogenic fungus

Author: Liu, Ching-Piao; Lin, Pei-Haw

Corporate Source: China University of Science and Technology Department of Food Science Taipei 11581, Taiwan, Province of China (TW)

Source: International Journal of Innovative Biological Research (**2013**), 2(1), pp. 21-29 *In English*
CODEN: IJIBCS
ISSN: 2169-1878

DOI: 10.2169/ijibr.2013.2.1.3

Publisher: Sci-Edit Publications, San Francisco, California (CA), United States (US)

Document Type: Journal (Online Computer File)

Document ID: 2014:708517 (DN 161:401882)

Abstract

UV radiation can reduce the effectiveness of fungi used for biol. control. By exposing it to simulated solar radiation for a few hours, the conidia of the fungus can be completely inactivated. This study investigated the

effects of exposing the conidial culturability and germination of the entomopathogenic *Metarhizium anisopliae* and ***Beauveria bassiana***, which were incubated in sabouraud dextrose agar (SDA), to a UV-B radiation dose of 30 íw cm-2. Furthermore, the addn. of TiO2 and SiO2 nanoparticles (NPs) (0.25 mL of 0.5% w/v aq. soln. for each), as well as the traditional UV protectants (0.25 mL) such as yeast ext., skimmed milk (SM), and vegetable oils in the culture medium, was also examd. to understand their effect on the culturability and germination of spore suspensions. The radiation time was varied from 1 min to 2 h, and the germination rate was measured after 24 h and 48 h of **incubation** time. The results indicated that TiO2 NPs exhibited the best performance, followed by SiO2 NPs, and by vegetable oil. After an **incubation** period of 24 h, the germination rate increased from 10% to 60% with the addn. of TiO2 NPs, whereas the germination rate increased from 15% to 70% with an **incubation** period of 48 h. The enhancing survival property decreased in the following order: TiO2 > SiO2 > Oil > NaCl > ZnO > benzophenone > sodium salicylate > Me cinnamate. To validate the performance of a batch study in bio-control, a field study in cauliflower cultivation was conducted.

Supplementary Terms: *Metarhizium Beauveria* titanium dioxide nanoparticle UV protectant radiation

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

12321-65-2, Silver dioxide

1314-13-2, Zinc oxide

13463-67-7, Titanium dioxide

Biological Study (BIOL) Biological Study, Unclassified (BSU) Nanomaterial (NANO)

titanium dioxide nanoparticles as UV protectants for enhancing the survival of conidia of the entomopathogenic fungus

103-26-4, Methyl cinnamate

119-61-9, Benzophenone

54-21-7, Sodium salicylate

7647-14-5, Sodium chloride

Biological Study (BIOL) Biological Study, Unclassified (BSU)

titanium dioxide nanoparticles as UV protectants for enhancing the survival of conidia of the entomopathogenic fungus

Beauveria bassiana

Bioinsecticides

Cell morphology

Metarhizium anisopliae

Skim milk

Solar radiation

Soy sauce

Spore germination

UV radiation

titanium dioxide nanoparticles as UV protectants for enhancing the survival of conidia of the entomopathogenic fungus

Olive oil
Peanut oil
Unsaturated fatty acids
Vegetable oils

Biological Study (BIOL) Biological Study, Unclassified (BSU)

titanium dioxide nanoparticles as UV protectants for enhancing the survival of conidia of the entomopathogenic fungus

Spore

conidiospore; titanium dioxide nanoparticles as UV protectants for enhancing the survival of conidia of the entomopathogenic fungus

Dates

Entered STN: 02 May 2014

Last Update: 14 Nov 2015

Bibliographic Update: 02 May 2014

Indexing Update: 14 Nov 2015

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5. Optimization process for blastospore production of **Beauveria bassiana** isolates in Poly Ethylene Glycol (PEG) supplemented medium

Author: Chinnadurai, Subramanian; Punamalai, Ganesh

Corporate Source: Annamalai University Department of Microbiology Annamalainagar 608 002, India (IN)

Source: International Journal of Current Microbiology and Applied Sciences (**2013**), 2(11), pp. 114-122, 9 *In English*

CODEN: IJCMO9

ISSN: 2319-7706

URL: [http://www.ijcmas.com/vol-2-](http://www.ijcmas.com/vol-2-11/Chinnadurai%20Subramanian%20and%20Ganesh%20Punamalai.pdf)

11/Chinnadurai%20Subramanian%20and%20Ganesh%20Punamalai.pdf

Publisher: IJCMAS Scientific Publishers, Tamilnadu, India (IN)

Document Type: Journal (Online Computer File)

Document ID: 2014:696959 (DN 162:21505)

Abstract

The entomopathogenic fungus **Beauveria bassiana** is a globally distributed Hyphomycete, strains of which infect a range of insects. Strains of **Beauveria bassiana** have been used as the active agents in a no. of biopesticides against a variety of agricultural pests, including whiteflies, beetles, grasshoppers and psyllids. Blastospore prodn. of three different **Beauveria bassiana** isolates viz., Bb-1, Bb-2 and Bb-3 in Poly

Ethylene Glycol (PEG) supplemented medium was investigated in the present study. The SDA medium was supplemented with various concns. (1%, 2%, 3%, 4% and control) of PEG 6000 and the growth of **Beauveria bassiana** isolates were estd. Among the three **Beauveria bassiana** isolates, **Beauveria bassiana** (Bb-1) showed max. blastospore prodn. followed by **Beauveria bassiana** (Bb-2) and least blastospore prodn. was obsd. in the isolate **Beauveria bassiana** (Bb-3). Blastospore prodn. was max. at pH 6, 27°C, 11 h **incubation** period, 175 rpm agitation speed and 8% inoculum size.

Supplementary Terms: Beauveria blastospore poly ethylene glycol temp hydrogen ion concn

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:

25322-68-3, Poly ethylene glycol

Biological Study (BIOL) Biological Study, Unclassified (BSU)

Beauveria bassiana isolates in poly ethylene glycol supplemented medium at pH 6 and temp. 27°C, 11 h **incubation** period, 175 rpm agitation speed, 8 percent inoculum size showed max. blastospore prodn.

Agitation (mechanical)

Beauveria bassiana

Biopesticides

Growth, microbial

pH

Spore

Statistical optimization

Temperature effects, biological

Beauveria bassiana isolates in poly ethylene glycol supplemented medium at pH 6 and temp. 27°C, 11 h **incubation** period, 175 rpm agitation speed, 8 percent inoculum size showed max. blastospore prodn.

Fungi

entomopathogenic; **Beauveria bassiana** isolates in poly ethylene glycol supplemented medium at pH 6 and temp. 27°C, 11 h **incubation** period, 175 rpm agitation speed, 8 percent inoculum size showed max. blastospore prodn.

Fungi

hyphomycetous; **Beauveria bassiana** isolates in poly ethylene glycol supplemented medium at pH 6 and temp. 27°C, 11 h **incubation** period, 175 rpm agitation speed, 8 percent inoculum size showed max. blastospore prodn.

Polyoxyalkylenes

Biological Study (BIOL) Biological Study, Unclassified (BSU)

Beauveria bassiana isolates in poly ethylene glycol supplemented medium at pH 6 and temp. 27°C, 11 h **incubation** period, 175 rpm agitation speed, 8 percent inoculum size showed max. blastospore prodn.

Spore

blastospore; **Beauveria bassiana** isolates in poly ethylene glycol supplemented medium at pH 6 and temp. 27°C, 11 h **incubation** period, 175 rpm agitation speed, 8 percent inoculum size showed max. blastospore

prodn.

Dates

Entered STN: 30 Apr 2014
Last Update: 12 Mar 2016
Bibliographic Update: 17 Dec 2014
Indexing Update: 12 Mar 2016

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6. A putative link between phagocytosis-induced apoptosis and hemocyanin-derived phenoloxidase activation

Author: Coates, Christopher J.; Whalley, Tim; Wyman, Michael; Nairn, Jacqueline
Corporate Source: University of Stirling Biological and Environmental Sciences, School of Natural Sciences
Source: Stirling FK9 4LA, United Kingdom (GB)
Source: Apoptosis (**20131130**), 18(11), pp. 1319-1331 *In English*
CODEN: APOPFN
ISSN: 1360-8185
DOI: 10.1007/s10495-013-0891-x
Publisher: Springer, Dordrecht, Netherlands (NL)
Document Type: Journal (Online Computer File)
Document ID: 2013:1248155 (DN 159:559929)

Abstract

We present data showing that amebocytes of the chelicerate, *Limulus polyphemus*, undergo phagocytosis-induced cell death after ingesting spores of the fungus, *Beauveria bassiana*, in vitro. The obsd. biochem. and morphol. modifications assocd. with dying amebocytes are congruent with the hallmarks of apoptosis, including: extracellularization of phosphatidylserine, intranucleosomal DNA fragmentation, and an increase in caspase 3/7-like activities. Previous studies have demonstrated that phosphatidylserine is a putative endogenous activator of hemocyanin-derived phenoloxidase, inducing conformational changes that permit phenolic substrate access to the active site. Here, we obsd. extracellular hemocyanin-derived phenoloxidase activity levels increase in the presence of apoptotic amebocytes. Enzyme activity induced by phosphatidylserine or apoptotic amebocytes was reduced completely upon **incubation** with the phosphatidylserine binding protein, annexin V. We propose that phosphatidylserine redistributed to the outer plasma membrane of amebocytes undergoing phagocytosis-induced apoptosis could interact with hemocyanin, thus facilitating its conversion into a phenoloxidase-like enzyme, during immune challenge.

Supplementary Terms: phagocytosis apoptosis amebocyte hemocyanin phenoloxidase chelicerate fungi

infection

Classification Codes

CA Section Code: Nonmammalian Biochemistry (12)

Indexing

Index Terms:

169592-56-7, Caspase 3

189258-14-8, Caspase 7

9002-10-2, Phenoloxidase

Biological Study (BIOL) Biological Study, Unclassified (BSU)

fungal infection effect on phagocytosis-induced apoptosis and hemocyanin-derived phenoloxidase activation in amebocytes of chelicerates

Amebocyte

Apoptosis

Beauveria bassiana

Cell membrane

DNA fragmentation

Limulus polyphemus

Mycosis

Phagocytosis

fungal infection effect on phagocytosis-induced apoptosis and hemocyanin-derived phenoloxidase activation in amebocytes of chelicerates

Annexin V

Hemocyanins

Phosphatidylserines

Biological Study (BIOL) Biological Study, Unclassified (BSU)

fungal infection effect on phagocytosis-induced apoptosis and hemocyanin-derived phenoloxidase activation in amebocytes of chelicerates

Dates

Entered STN: 13 Aug 2013

Last Update: 01 Mar 2017

Bibliographic Update: 22 Oct 2013

Indexing Update: 01 Mar 2017

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7. Method for breeding *Cyprinus carpio*

Inventor: Kong, Yunrong

Patent Assignee:

Source: Faming Zhuanli Shenqing pp. 23 *In Chinese*
CODEN: CNXXEV

Document Type: Patent

Document ID: 2013:997440 (DN 159:185539)

Patent Information

Publication			Application		Priority	
Number	Kind	Date	Number	Date	Number	Date
CN103168711	A	20130626	CN2011-10460190	20111224	CN2011-10460190	20111224

Patent Family

CAplus Extended Family Count: 1
2013:997440

Country count: 1
Patent Number Count: 2
[Country Count and Patent Number Count are based on CAplus family]

Publication			Application		Priority		Update
Number	Kind	Date	Number	Date	Number	Date	Date
CN103168711*	A	20130626	CN2011-10460190	20111224	CN2011-10460190	20111224	27 Jun 2013
CN103168711	B	20160817	CN2011-10460190	20111224	CN2011-10460190	20111224	19 Aug 2016

[* indicates basic patents]

Patent Classifications

Publication Number	Kind	Class	Classification Codes
CN103168711*	A	IPC1	A01K0061/00; C02F0001/50; A01K0061/00; C02F0001/50
		IPCR	A01K0061/00; C02F0001/50
		CPC	Y02A0040/81
CN103168711	B	IPC1	A01K0061/00; C02F0001/50
		IPCR	A01K0061/00; C02F0001/50
		CPC	Y02A0040/81

[* indicates basic patents]

Abstract

The title method comprises the steps of: building a natural spawning and fertilization pond, a natural egg **incubation** and propagation pond and an artificial egg **incubation** and propagation pond, sterilizing ponds by quicklime and bleaching agents, controlling water depth, water temp. and water quality, selecting parent fish, feeding by high protein feed (bean cake, silkworm pupa, fish meal and snails), complex feed, parent fish feed, vitamin, aquatic plant and algae, inducing spawning by injecting human chorionic gonadotropin and

luliberin to female fish, culturing baby fish by yolk, soybean milk and pulp of water flea, Alternanthera philoxeroides, Eichhornia crassipes and Pistia stratiotes, acclimating fishnet pulling, controlling and preventing Myxococcus piscicola by feeding enrofloxacin and oxytetracycline and sterilizing by bleaching powder, and controlling and preventing Saprolegnia parasitica using formaldehyde. Cyprinus carpio has fast growth speed, high resistance to low O content, low temp. and diseases, simple acclimation, simple fishing, high adaptability in pond, and good taste. The breeding method has short period and increased economic benefit.

Supplementary Terms: breeding Cyprinus

Classification Codes

CA Section Code: Water (61)

Indexing

Index Terms:

7647-14-5, Sodium chloride

9002-61-3, Human chorionic gonadotropin

Agricultural Use (AGR) Biological Study (BIOL) Uses (USES)

method for breeding Cyprinus carpio

7782-44-7, Oxygen

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

method for breeding Cyprinus carpio

50-00-0, Formaldehyde

64-17-5, Ethanol

7553-56-2, Iodine

7778-54-3, Calcium hypochlorite

7782-50-5, Chlorine

Biological Study (BIOL) Biological Use, Unclassified (BUU) Uses (USES)

method for breeding Cyprinus carpio

1406-18-4, Vitamin E

Biological Study (BIOL) Food or Feed Use (FFD) Uses (USES)

method for breeding Cyprinus carpio

79-57-2, Oxytetracycline

93106-60-6, Enrofloxacin

Biological Study (BIOL) Therapeutic Use (THU) Uses (USES)

method for breeding Cyprinus carpio

7664-41-7, Ammonia

Occurrence (OCCU) Occurrence, Unclassified (OCU)

method for breeding Cyprinus carpio

14807-96-6, Talcum

Other Use, Unclassified (NUU) Uses (USES)

method for breeding Cyprinus carpio

Algae
Alternanthera philoxeroides
Animal breeding
Aquatic plant
Beauveria bassiana
Carp
Cladocera
Cyprinus carpio
Egg
Egg yolk, poultry
Eichhornia crassipes
Fish meal
Glycine max
Margarya melanioides
Myxococcus piscicola
Pistia stratiotes
Pituitary gland
Saprolegnia parasitica
Soy milk
Soybean
Soybean meal cake
Water purification
method for breeding Cyprinus carpio

Lime (chemical)
Other Use, Unclassified (NUU) Uses (USES)
method for breeding Cyprinus carpio

Soybean products
soybean curd waste; method for breeding Cyprinus carpio

Vitamins
Biological Study (BIOL) Food or Feed Use (FFD) Uses (USES)
method for breeding Cyprinus carpio

Dates

Entered STN:	27 Jun 2013
Last Update:	19 Aug 2016
Bibliographic Update:	27 Jun 2013
Patent Family Update:	19 Aug 2016
Indexing Update:	25 Nov 2015

8. Degradation of the minor *Fusarium* mycotoxin beauvericin by intracellular enzymes of *Saccharomyces cerevisiae*

Author: Meca, G.; Ritieni, A.; Zhou, T.; Li, X. Z.; Manes, J.
Corporate Source: University of Valencia Laboratory of Food Chemistry and Toxicology, Faculty of Pharmacy Burjassot 46100, Spain (ES)
Source: Food Control (**20131031**), 33(2), pp. 352-358 *In English*
CODEN: FOOCEV
ISSN: 0956-7135
DOI: 10.1016/j.foodcont.2013.03.035
Publisher: Elsevier Ltd., Oxford, United Kingdom (GB)
Document Type: Journal (Online Computer File)
Document ID: 2013:787143 (DN 160:397944)

Abstract

Beauvericin (BEA) is a cyclic depsipeptide with antibiotic and insecticidal effects. It was discovered for the first time from the fungus *Beauveria bassiana*, but more significantly, is produced by several *Fusarium* strains, and considered a contaminant of several cereals like corn, wheat and barley. This study investigated the degrdn. of BEA by intracellular raw enzymes of four strains of *Saccharomyces cerevisiae*, named LO9, YE5, A34, and A17. The BEA at 25 mg/kg in a model soln. and in corn flour was co-incubated with the raw enzymes from the four yeast strains, resp. The redn. of BEA was evaluated using liq. chromatog. coupled to a diode array detector (LC-DAD); the products formed during the co-**incubation** were detd. by liq. chromatog. coupled to mass spectrometry-linear ion trap (LC-MS-LIT). In model soln. BEA redn. ranged from 83 to 100%. In corn flour treated with the intracellular raw enzymes, the BEA degrdn. was from 66 to 91%. A product resulted from the BEA degrdn. was identified.

Supplementary Terms: beauvericin *Fusarium* *Saccharomyces* degrdn

Classification Codes

CA Section Code: Food And Feed Chemistry (17)

Indexing

Index Terms:

26048-05-5, Beauvericin

Adverse Effect, Including Toxicity (ADV) Biological Study (BIOL)

degrdn. of minor *Fusarium* mycotoxin beauvericin by intracellular enzymes of *Saccharomyces cerevisiae*

109-52-4, Valeric acid

9001-92-7, Protease

Biological Study (BIOL) Biological Study, Unclassified (BSU)

degrdn. of minor *Fusarium* mycotoxin beauvericin by intracellular enzymes of *Saccharomyces cerevisiae*

14265-44-2, Phosphate

Biological Study (BIOL) Biological Use, Unclassified (BUU) Uses (USES)
degrdn. of minor Fusarium mycotoxin beauvericin by intracellular enzymes of Saccharomyces cerevisiae

Biodegradation
Corn flour
Food contamination
Fusarium
Isopropyl group
Saccharomyces cerevisiae
Wheat flour
degrdn. of minor Fusarium mycotoxin beauvericin by intracellular enzymes of Saccharomyces cerevisiae

Dates

Entered STN: 21 May 2013
Last Update: 06 Nov 2015
Bibliographic Update: 21 May 2013
Indexing Update: 06 Nov 2015

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9. Some important fungi, Trichophyton sp., Beaveria bassiana and Plurotus ostreatus resist heavy metals: promising fungal strains for their potential as bioremediation agents

Author: Kumar, Raman; Sharma, A. K.; Pandey, Ratnesh; Sandhu, Sardul S.
Corporate Source: M.M. University Department of Biotechnology, M. M.E.C. Mullana-Ambala 133203, India (IN)
Source: Current Trends in Biotechnology and Chemical Research (**20110630**), 1(1), pp. 22-26
In English
CODEN: CTBCCY
ISSN: 2249-4073
Publisher: Maharishi Markandeshwar University, Mullana, Ambala, India (IN)
Document Type: Journal
Document ID: 2013:67751 (DN 159:295298)

Abstract

Many industries like electroplating, paint, leather tanning etc. release enormous amt. of heavy metals contaminated wastewater. These heavy metals enter into human beings and animals through food chain. So there is a need to remove these heavy metals through low cost technol. Microorganisms including fungi and bacteria have been reported to exclude heavy metals from wastewater through bioaccumulation and biosorption at low cost and in an eco-friendly manner. An attempt was, therefore, made to screen various fungi

such as *Trichophyton* sp., *Beauveria bassiana* and *Pleurotus ostreatus* on Potato Dextrose Agar (pH 5.0) supplemented with 20, 40, 60, 100 and 500 mg/l concns. of Cd, Fe, Ni and Hg individually. Observations on growth of fungi were made after 5 days of **incubation** at $28 \pm 2^\circ$ C. The results showed that all the fungi showed a dose dependent decrease in growth pattern with the increase in metal concn. *Trichophyton* sp. and *Pleurotus ostreatus* were found to resist Cd, Ni and Fe more effectively than *B. bassiana*. However none of the strains could grow above 100 ppm concns. of all the heavy metals. Hg-contg. plates though, didn't show any growth even beyond 40 ppm which indicates the toxicity level of mercury in the all fungal strains and their inability to tolerate this metal above the said concn. These fungal strains could be potentially very useful in bioremediation in terms of removal of toxic heavy metals.

Supplementary Terms: heavy metal biosorption wastewater treatment fungi bioremediation

Classification Codes

CA Section Code: Waste Treatment And Disposal (60)

Section cross-reference(s): 10

Indexing

Index Terms:

7439-89-6, Iron

7439-97-6, Mercury

7440-02-0, Nickel

7440-43-9, Cadmium

Biochemical Process (BCP) Biological Study (BIOL) Occurrence (OCCU) Pollutant (POL) Process (PROC)
role of fungi in resisting heavy metals and as potential bioremediation agents

Beauveria bassiana

Bioremediation

Biosorbents

Biosorption

Biosorptive wastewater treatment

Pleurotus ostreatus

Trichophyton

role of fungi in resisting heavy metals and as potential bioremediation agents

Heavy metals

Biochemical Process (BCP) Biological Study (BIOL) Occurrence (OCCU) Pollutant (POL) Process (PROC)
role of fungi in resisting heavy metals and as potential bioremediation agents

Dates

Entered STN: 14 Jan 2013

Last Update: 04 Jan 2019

Bibliographic Update: 14 Jan 2013

Indexing Update: 04 Jan 2019

10. Toxicity of pesticides used in sugarcane cultivation toward entomopathogenic fungi in soil

Author: Botelho, Aline Aparecida Alves; Monteiro, Antonio Carlos
Corporate Source: Universidade Estadual Paulista Mestre em Microbiologia Agropecuaria, ex-aluna do Programa de Pos-graduacao em Microbiologia Agropecuaria, Faculdade de Ciencia Agrarias e Veterinarias Jaboticabal, SP, Brazil (BR)
Source: Pesticidas (**20111231**), 21 pp. 73-84 *In Portuguese*
CODEN: PTICEA
ISSN: 0103-7277
Publisher: Universidade Federal do Parana, Centro de Pesquisa e Processamento de Alimentos, Curitiba, Brazil (BR)
Document Type: Journal
Document ID: 2012:1743702 (DN 158:466576)

Abstract

The effects of 2 soil types (clay, sandy) on the toxicity of pesticides against the entomopathogenic fungi *Metarhizium anisopliae* and *Beauveria bassiana* were studied in vitro. The insecticides aldicarb and fipronil, herbicides diuron and clomazone + ametryne, and the crop ripeners trinexapac Et and sulfometuron Me used in the Brazilian sugarcane prodn. were evaluated. The test fungi were inoculated into clay and sandy soils before and after the addn. of the pesticides. The fungal survival was evaluated at 0, 1, 4, and 7 days of **incubation**. Aldicarb decreased the survival of *M. anisopliae* and *B. bassiana* in both soil types, with less toxic effects in the clay soil. Fipronil did not affect the *B. bassiana* survival in either soil types. Diuron had lower toxic effect on *B. bassiana* and higher toxic effect on *M. anisopliae* in the sandy soil. Clomazone + ametryne, Et trinexapac, and sulfometuron-Me decreased the fungal survival in both soil types, with less toxic effect in the clay soil. Thus, the pesticides used in the cultivation of sugarcane are toxic to *M. anisopliae* and *B. bassiana* in both clay and sandy soils. The adverse effects were lower in the clay soil and higher when the pesticides were added to the soil just before or after fungal inoculation.

Supplementary Terms: pesticide *Metarhizium* *Beauveria* entomopathogenic fungus soil inhibition

Classification Codes

CA Section Code: Agrochemical Bioregulators (5)

Indexing

Index Terms:

116-06-3, Aldicarb

120068-37-3, Fipronil

330-54-1, Diuron

479621-22-2, Clomazone-ametryn mixt.

74222-97-2, Sulfometuron methyl

95266-40-3, Trinexapac Ethyl

Adverse Effect, Including Toxicity (ADV) Agricultural Use (AGR) Biological Study (BIOL) Uses (USES)

toxicity of pesticides used in sugarcane cultivation toward soil entomopathogenic fungi *Metarhizium anisopliae* and ***Beauveria bassiana***

Beauveria bassiana

Metarhizium anisopliae

Pesticides

Sandy soils

toxicity of pesticides used in sugarcane cultivation toward soil entomopathogenic fungi *Metarhizium anisopliae* and ***Beauveria bassiana***

Soils

Latosols; toxicity of pesticides used in sugarcane cultivation toward soil entomopathogenic fungi *Metarhizium anisopliae* and ***Beauveria bassiana***

Dates

Entered STN: 30 Nov 2012

Last Update: 17 Nov 2015

Bibliographic Update: 30 Nov 2012

Indexing Update: 17 Nov 2015

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11. Immunosuppressive properties of a protein (rVPr1) from the venom of the endoparasitic wasp, *Pimpla hypochondriaca*: Mechanism of action and potential use for improving biological control strategies

Author: Richards, E. H.; Dani, M. P.; Bradish, H.

Corporate Source: Food and Environment Research Agency

Source: Journal of Insect Physiology (**20130228**), 59(2), pp. 213-222 *In English*
CODEN: JIPHAF
ISSN: 0022-1910

DOI: 10.1016/j.jinsphys.2012.06.001

Publisher: Elsevier Ireland Ltd., Shannon, Ireland (IE)

Document Type: Journal (Online Computer File)

Document ID: 2012:941188 (DN 161:2454)

Abstract

Previously, it was detd. that the presence of rVPr1 (a recombinant *Pimpla hypochondriaca* venom protein), in

the haemocoel of two lepidopteran larvae, significantly increases their susceptibility to the biol. control agents (BCAs), *Bacillus thuringiensis* (Bt) and *Beauveria bassiana* (Richards and Dani, 2010; Richards et al., 2011). The current work examines the mechanism of action of rVPr1 and demonstrates that it binds to the surface of some haemocytes and disrupts the organization of the haemocyte cytoskeleton. This binding is assocd. with a redn. in the ability of haemocytes to extend pseudopods, and to move and form aggregates in vitro over an 18 h period. Moreover, rVPr1 exerts these effects after a relatively short **incubation** period (1.5 h) and the haemocytes do not recover their ability to form aggregates after rVPr1 has been removed. In addn., rVPr1 significantly reduces haemocyte-mediated phagocytosis of Bt and *B. bassiana* in vitro ($p < 0.05$) and, following injection into the insect haemocoel, rVPr1 reduces the no. of circulating haemocytes per mL of haemolymph (this being significantly different to the controls 3 h after injection [$p = 0.05$]). The finding that rVPr1 has an adverse effect on haemocyte function and no. in vivo, supports the hypothesis that this wasp protein significantly increases the susceptibility of lepidopteran larvae to Bt and *B. bassiana*, by suppressing haemocyte-mediated immune responses in the insects which otherwise would be directed against these BCAs.

Supplementary Terms: Pimpla rVPr1 venom immunity immunosuppression

Classification Codes

CA Section Code: Toxicology (4)

Indexing

Index Terms:

Bacillus thuringiensis

Beauveria bassiana

Cytoskeleton

Hemocyte

Immunity

Immunosuppression

Phagocytosis

Pimpla hypochondriaca

Venoms

immunosuppressive properties of rVPr1 from venom of endoparasitic wasp, *Pimpla hypochondriaca* and mechanism of action and its potential use for improving biol. control strategies

Hemocyte

plasmatocyte; immunosuppressive properties of rVPr1 from venom of endoparasitic wasp, *Pimpla hypochondriaca* and mechanism of action and its potential use for improving biol. control strategies

Proteins

Biological Study (BIOL) Pharmacological Activity (PAC) Therapeutic Use (THU) Uses (USES)

rVPr1; immunosuppressive properties of rVPr1 from venom of endoparasitic wasp, *Pimpla hypochondriaca* and mechanism of action and its potential use for improving biol. control strategies

Dates

Entered STN: 02 Jul 2012

Last Update: 14 Jun 2014

Bibliographic Update: 02 Jul 2012
Indexing Update: 14 Jun 2014

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12. Liquid culturing of microsclerotia of *Beauveria bassiana*, an entomopathogenic fungus to control western flower thrip, *Frankliniella occidentalis*

Author: Wang, Haihong; Wang, Jingling; Li, Yinping; Liu, Xuan; Wen, Jinzeng; Lei, Zhongren
Corporate Source: Chinese Academy of Agricultural Sciences State Key Laboratory for Biology of Plant Diseases and Insect Pests Beijing 100193, China (CN)
Source: Yingyong Kunchong Xuebao (**20110531**), 48(3), pp. 588-595 *In Chinese*
CODEN: YKXIAX
ISSN: 2095-1353
Publisher: Yingyong Kunchong Xuebao Bianjibu, Beijing, China (CN)
Document Type: Journal
Document ID: 2011:921990 (DN 156:72097)

Abstract

Microsclerotia (MS), overwintering structures produced by many plant pathogenic fungi, have not been described for *Beauveria bassiana*. Two strains of *B. bassiana*, RSB, and SZ21, formed MS in shake flask cultures using media with different nitrogen sources. Both strains produced MS in addn. to typical blastospores and mycelia. Strain SZ21 (17.9×10^5 and 7.4×10^5 L⁻¹ in media with soybean powder and corn flour, resp.) produced higher concns. of MS than strain RSB (14.8×10^5 and 6.2×10^5 L⁻¹ in media with soybean powder and corn flour, resp.) of *B. bassiana*. Microsclerotial preps. of *B. bassiana* contg. diatomaceous earth survived vacuum drying (to <5% moisture) with no significant loss in viability. Rehydration and **incubation** of vacuum-dried MS granules on water agar plates resulted in hyphal germination and sporogenic germination to produce high concns. of conidia. Bioassays using soil-incorporated, vacuum-dried MS preps. resulted in significant infection and mortality in soil-dwelling stages of the western flower thrip, *Frankliniella occidentalis* (Pergande). This is the first report of the prodn. of sclerotial bodies by *B. bassiana* and provides a novel approach for the control of soil-dwelling insects with this entomopathogenic fungus.

Supplementary Terms: Beauveria Frankliniella insecticide fermn

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)
Section cross-reference(s): 5, 12

Indexing

Index Terms:

9005-65-6, Tween 80

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

liq. culturing of microsclerotia of **Beauveria bassiana**, an entomopathogenic fungus to control western flower thrip, *Frankliniella occidentalis*

Beauveria bassiana

Corn flour

Fermentation

Frankliniella occidentalis

Growth, microbial

Hyphae

Insecticides

Soybean meal

Wheat bran

Yeast extract

liq. culturing of microsclerotia of **Beauveria bassiana**, an entomopathogenic fungus to control western flower thrip, *Frankliniella occidentalis*

Casamino acids

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

liq. culturing of microsclerotia of **Beauveria bassiana**, an entomopathogenic fungus to control western flower thrip, *Frankliniella occidentalis*

Sclerotium (mycelial mass)

microsclerotia; liq. culturing of microsclerotia of **Beauveria bassiana**, an entomopathogenic fungus to control western flower thrip, *Frankliniella occidentalis*

Spore

blastospore; liq. culturing of microsclerotia of **Beauveria bassiana**, an entomopathogenic fungus to control western flower thrip, *Frankliniella occidentalis*

Dates

Entered STN: 25 Jul 2011

Last Update: 06 Nov 2015

Bibliographic Update: 25 Jul 2011

Indexing Update: 06 Nov 2015

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13. Screening of different fungi for decolorization of molasses

Author: Seyis, Isil; Subasioglu, Tugba

Corporate Source: Hacettepe University Faculty of Science, Biology, Department of Biotechnology Beytepe 06532, Turkey (TR)

Source: Brazilian Journal of Microbiology (**20090331**), 40(1), pp. 61-65 *In English*

CODEN: BJMRAH

ISSN: 1517-8382

DOI: 10.1590/s1517-83822009000100009**Publisher:** Brazilian Society of Microbiology, Sao Paulo, Brazil (BR)**Document Type:** Journal**Document ID:** 2011:228049 (DN 154:534557)

Abstract

The decolorization of molasses by 17 different fungi in 2 media was studied. *Trichoderma viride* showed the highest decolorization yield (53.5%) when cultivated at 30°C for 7 days in Medium 1 which contained the molasses which was dild. to 40 g/L in distd. water. The other *Trichoderma* species and *Penicillium* sp. Also gave similar results of 40-45%. Decolorization yield was increased by adding peptone and yeast ext. to the prodn. medium except *Penicillium* sp. Growth rate was not related to decolorization yet pH value was. When the pH decreased below 5.0 after the **incubation**, the decolorization yield increased. Although reducing sugar in culture broth decreased with decreasing color intensity, there was no connection between protein utilization and decolorizing activity.

Supplementary Terms: *Trichoderma* *Penicillium* decolorization molasses

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

Alternaria alternata

Aspergillus niger

Beauveria bassiana

Decolorization

Fusarium acuminatum

Fusarium culmorum

Fusarium equiseti

Fusarium sambucinum

Gibberella fujikuroi

Humicola fuscoatra

Humicola insolens

Molasses

Paecilomyces lilacinus

Penicillium

pH

Rhizopus

Trichoderma harzianum

Trichoderma viride

T. viride show highest decolorization of molasses under culture medium compared with *Penicillium* where decolorization yield was increased by adding peptone and yeast ext. to prodn. medium and but not related to protein utilization

Dates

Entered STN: 23 Feb 2011
Last Update: 26 May 2011
Bibliographic Update: 23 Feb 2011
Indexing Update: 26 May 2011

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14. Characterization of a thioredoxin (BbTrx) from the entomopathogenic fungus *Beauveria bassiana* and its expression in response to thermal stress

Author: Ying, Sheng-Hua; Wang, Xiao-Hui; Feng, Ming-Guang
Corporate Source: Zhejiang University Institute of Microbiology, College of Life Sciences Zhejiang 310058, China (CN)
Source: Canadian Journal of Microbiology (**20101130**), 56(11), pp. 934-942 *In English*
CODEN: CJMIAZ
ISSN: 0008-4166
DOI: 10.1139/w10-081
Publisher: Canadian Science Publishing, Ottawa, Ontario (ON), Canada (CA)
Document Type: Journal
Document ID: 2010:1323022 (DN 155:176475)

Abstract

A thioredoxin (BbTrx) was identified from the entomopathogenic fungus *Beauveria bassiana*. The cloned nucleotide sequence consisted of a 423-bp open reading frame encoding a 141-amino-acid thioredoxin, a 1011-bp 5' region, and a 419-bp 3' region. The deduced protein sequence of BbTrx, including a common 95-amino-acid conserved domain and a unique 46-amino-acid carboxy terminal region, was similar ($\leq 38\%$ identity) to that of other thioredoxins and phylogenetically closest to that from *Neurospora crassa*. In insulin soln. contg. dithiothreitol at 25 °C, recombinant BbTrx or a truncated form lacking the carboxy terminal region (BbTrxD) exhibited disulfide redn. activity. BbTrxD was more active after pre-**incubation** at 40-75 °C, and cells expressing BbTrxD showed significantly higher tolerance to thermal stress (51 °C). The BbTrx expression in *B. bassiana* was greatly elevated when stressed at 40 °C. The results indicate that the new thioredoxin is a potential target for improving the thermotolerance of *B. bassiana* formulations.

Supplementary Terms: sequence *Beauveria* thioredoxin gene Trx thermotolerance; heat stress *Beauveria* thioredoxin gene Trx induction

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)
Section cross-reference(s): 3, 6

Indexing

Index Terms:

1313339-50-2, Thioredoxin (**Beauveria bassiana**)

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

amino acid sequence; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

1313339-49-9, DNA (**Beauveria bassiana** thioredoxin gene)

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

nucleotide sequence; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Beauveria bassiana

DNA sequences

Protein sequences

characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Disulfide group

redn. of; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Heat stress, microbial

tolerance toward; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Microbial gene

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

Trx; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Taxonomy

mol. phylogeny; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Thioredoxins

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

gene Trx; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Transcriptional regulation

transcriptional activation; of gene Trx with heat; characterization of thioredoxin (gene Trx) from entomopathogenic fungus **Beauveria bassiana** and expression in response to thermal stress

Dates

Entered STN: 25 Oct 2010

Last Update: 24 Dec 2018

Bibliographic Update: 16 Jan 2017

Indexing Update: 24 Dec 2018

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15. Microbial Transformations of Aryltetralone and Aryltetralin Lignans by *Cunninghamella echinulata* and *Beauveria bassiana*

Author: Messiano, Gisele B.; Wijeratne, E. M. Kithsiri; Lopes, Lucia M. X.; Gunatilaka, A. A. Leslie
Corporate Source: University of Arizona SW Center for Natural Products Research and Commercialization, Office of Arid Land Studies, School of Natural Resources and the Environment, College of Agriculture and Life Sciences Tucson, Arizona (AZ) 85706-6800, United States (US)
Source: Journal of Natural Products (**20101130**), 73(11), pp. 1933-1937 *In English*
CODEN: JNPRDF
ISSN: 0163-3864
DOI: 10.1021/np100607s
Publisher: American Chemical Society-American Society of Pharmacognosy, Washington, District of Columbia (DC), United States (US)
Document Type: Journal
Document ID: 2010:1315646 (DN 153:616733)

Abstract

Microbiol. transformation of the aryltetralone lignan (-)-8'-epi-aristoligone (1) with *Cunninghamella echinulata* ATCC 10028B afforded two known natural lignans, (-)-holostyligone (3) and (-)-arisanetetralone (4). **Incubation** of the aryltetralin lignan (-)-isogalbulin (2), obtained by chem. transformation of 1, with *C. echinulata* ATCC 10028B afforded the known lignan aryltetralol (5) and seven new metabolites, (-)-8-hydroxyisogalbulin (6), (-)-7-methoxyisogalbulin (7), (-)-4'-O-demethyl-8-hydroxyisogalbulin (8), (-)-7-methoxy-8-hydroxyisogalbulin (9), (-)-4'-O-demethyl-7-methoxyisogalbulin (10), (-)-4',5-O-didemethylcyclogalgravin (11), and (-)-4'-O-demethylcyclogalgravin (12). When 2 was subjected to biotransformation with ***Beauveria bassiana*** ATCC 7159, (-)-8-hydroxyisogalbulin (6) was the only product isolated. The structures of all new compds. were established by detailed anal. of their spectroscopic data.

Supplementary Terms: *Cunninghamella Beauveria* lignan biotransformation

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Section cross-reference(s): 25

Indexing

Index Terms:

54548-00-4P, (-)-Isogalbulin

Biochemical Process (BCP) Biological Study (BIOL) Preparation (PREP) Process (PROC) Properties (PRP) Purification or Recovery (PUR) Synthetic Preparation (SPN)

microbial transformations of aryltetralone and aryltetralin lignans by *Cunninghamella echinulata* and

Beauveria bassiana

117404-43-0, (-)-8'-epi-Aristoligone

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC) Reactant (RCT) Reactant or Reagent (RACT)

microbial transformations of aryltetralone and aryltetralin lignans by *Cunninghamella echinulata* and

Beauveria bassiana

1255789-15-1P, (-)-8-Hydroxyisogalbulin

1255789-16-2P, (-)-7-Methoxyisogalbulin

1255789-17-3P

1255789-18-4P

1255789-19-5P, (-)-4'-O-Demethyl-7-methoxyisogalbulin

1255789-20-8P, (-)-4',5-O-Didemethylcyclogalgravin

1255789-21-9P, (-)-4'-O-Demethylcyclogalgravin

Biological Study (BIOL) Biological Study, Unclassified (BSU) Biosynthetic Preparation (BPN) Natural Product Occurrence (NPO) Occurrence (OCCU) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR)

microbial transformations of aryltetralone and aryltetralin lignans by *Cunninghamella echinulata* and

Beauveria bassiana

887501-31-7P

Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR)

microbial transformations of aryltetralone and aryltetralin lignans by *Cunninghamella echinulata* and

Beauveria bassiana

117047-76-4P, (-)-Arisantetralone

887501-28-2P, (-)-Holostyligone

Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP)

microbial transformations of aryltetralone and aryltetralin lignans by *Cunninghamella echinulata* and

Beauveria bassiana

Beauveria bassiana

Cunninghamella echinulata

Demethylation

Hydroxylation

Molecular structure, natural product

microbial transformations of aryltetralone and aryltetralin lignans by *Cunninghamella echinulata* and

Beauveria bassiana

Lignans

Biological Study (BIOL) Biological Study, Unclassified (BSU) Biosynthetic Preparation (BPN) Natural Product Occurrence (NPO) Occurrence (OCCU) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR)

microbial transformations of aryltetralone and aryltetralin lignans by *Cunninghamella echinulata* and

Beauveria bassiana

Dates

Entered STN: 22 Oct 2010
Last Update: 09 Dec 2010
Bibliographic Update: 22 Oct 2010
Indexing Update: 09 Dec 2010

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16. Production of cuticle - degrading proteases by *Beauveria bassiana* and their induction in different media

Author: Dhar, Priyanka; Kaur, Gurvinder
Corporate Source: Indian Institute of Technology Guwahati Department of Biotechnology Guwahati 781039, India (IN)
Source: African Journal of Biochemistry Research (20100331), 4(3), pp. 65-72 *In English*
CODEN: AJBRAJ
ISSN: 1996-0778
URL: <http://www.academicjournals.org/AJBR/PDF/pdf2010/Mar/Dhar%20and%20kuar.pdf>
Publisher: Academic Journals, Nairobi, Kenya (KE)
Document Type: Journal (Online Computer File)
Document ID: 2010:693803 (DN 154:428221)

Abstract

The concern for the development of hyphomycete fungi as suitable biocontrol agents of insect pests leads to the isolation of various insect pathogenic fungi. Amongst them, one of the most studied entomopathogenic fungus is *Beauveria bassiana*. The conidia of mitosporic fungi adhere to the host cuticle and germinate to produce an infectious propagule, and produce a sequential release of extra cellular enzymes to breach the insect cuticle. Protease is one of the most important and earliest enzymes involved in the host invasion. Extracellular protease prodn. by seventeen *B. bassiana* isolates was investigated in the present study. High protease activity was obsd. during four to six days of culture incubation. Induction mechanism of subtilisin type Pr1 and trypsin type Pr2 activity were investigated utilizing different media. Minimal medium supplemented with casein (1%) showed high protease prodn. and minimal medium supplemented with colloidal chitin (2%) was also able to induce Pr1 activity. The pH, ammonia and oxalic acid prodn. in in vitro conditions was also investigated and the alteration in pH for protease prodn. was not significant irresp. of the medium used. The protease activity gel was also studied and a common 66 kDa protease was obsd. in all the seven isolates studied.

Supplementary Terms: *Beauveria* cuticle protease subtilisin trypsin type Pr1 Pr2

Classification Codes

CA Section Code: Enzymes (7)

Section cross-reference(s): 10

Indexing

Index Terms:

9001-92-7, Protease

Biological Study (BIOL) Biological Study, Unclassified (BSU) Catalyst Use (CAT) Uses (USES)

prodn. of cuticle - degrading proteases by **Beauveria bassiana** and their induction in different media

144-62-7, Oxalic acid

7664-41-7, Ammonia

9002-07-7, Trypsin

9014-01-1, Subtilisin

Biological Study (BIOL) Biological Study, Unclassified (BSU)

prodn. of cuticle - degrading proteases by **Beauveria bassiana** and their induction in different media

Beauveria bassiana

Germination

Invertebrate cuticle

pH

prodn. of cuticle - degrading proteases by **Beauveria bassiana** and their induction in different media

Spore

conidiospore; prodn. of cuticle - degrading proteases by **Beauveria bassiana** and their induction in different media

Dates

Entered STN: 04 Jun 2010

Last Update: 18 Nov 2015

Bibliographic Update: 04 Jun 2010

Indexing Update: 18 Nov 2015

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17. Microbial metabolism of cannflavin A and B isolated from Cannabis sativa

Author: Ibrahim, Amany K.; Radwan, Mohamed M.; Ahmed, Safwat A.; Slade, Desmond; Ross, Samir A.; El Sohly, Mahmoud A.; Khan, Ikhlas A.

Corporate Source: Suez Canal University Department of Pharmacognosy, Faculty of Pharmacy Ismailia 41522, Egypt (EG)

Source: Phytochemistry (Elsevier) (**20100630**), 71(8-9), pp. 1014-1019 *In English*

CODEN: PYTCAS

ISSN: 0031-9422

DOI: 10.1016/j.phytochem.2010.02.011**Publisher:** Elsevier Ltd., Oxford, United Kingdom (GB)**Document** Journal**Type:****Document ID:** 2010:613825 (DN 153:197095)

Abstract

Microbial metab. of cannflavin A (I) and B (II), 2 biol. active flavonoids isolated from *C. sativa* L., produced 5 metabolites. **Incubation** of I and II with *Mucor ramannianus* and ***Beauveria bassiana***, resp., yielded 6''S,7''-dihydroxycannflavin A, 6''S,7''-dihydroxycannflavin A 7-sulfate, and 6''S,7''-dihydroxycannflavin A 4'-O- α -L-rhamnopyranoside, and cannflavin B 7-O- β -D-4'''-O-methylglucopyranoside and cannflavin B 7-sulfate, resp. All compds. were evaluated for antimicrobial and antiprotozoal activity.

Supplementary Terms: cannflavin metab *Mucor Beauveria*

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

1235392-72-9P

1235392-73-0P

1235392-74-1P

1235392-75-2P

1235392-76-3P

Biological Study (BIOL) Biological Study, Unclassified (BSU) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR)

microbial metab. of cannflavin A and B

76735-57-4, Cannflavin A

76735-58-5, Cannflavin B

Biological Study (BIOL) Biological Study, Unclassified (BSU)

microbial metab. of cannflavin A and B

50-99-7, D-Glucose

Reactant (RCT) Reactant or Reagent (RACT)

microbial metab. of cannflavin A and B

Beauveria bassiana

Umbelopsis ramanniana

microbial metab. of cannflavin A and B

Dates

Entered STN: 18 May 2010
Last Update: 02 Apr 2018
Bibliographic Update: 18 May 2010
Indexing Update: 02 Apr 2018

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18. Characterization of a new Cu/Zn-superoxide dismutase from **Beauveria bassiana** and two site-directed mutations crucial to its antioxidation activity without chaperon

Author: Xie, Xue-Qin; Ying, Sheng-Hua; Feng, Ming-Guang
Corporate Source: Zhejiang University Institute of Microbiology, College of Life Sciences 1-1-11 Sanwa-cho, Zhejiang 310058, China (CN)
Source: Enzyme and Microbial Technology (**20100305**), 46(3-4), pp. 217-222 *In English*
CODEN: EMTED2
ISSN: 0141-0229
DOI: 10.1016/j.enzmictec.2009.09.005
Publisher: Elsevier B.V., Amsterdam, Netherlands (NL)
Document Type: Journal
Document ID: 2010:103191 (DN 153:474411)

Abstract

A Cu/Zn-superoxide dismutase (SOD) was characterized for the first time from **Beauveria bassiana** by gene cloning, heterogeneous expression and function anal. This 154-aa SOD (BbSod1) was deduced from a 465-bp gene cloned, showing 49-96% sequence identity to Cu/Zn-SODs from other 57 fungi. BbSod1 and its form engineered with two site-directed mutations P143S and P145L (BbSod1-Mut) or a fused copper chaperon Lys7 (BbSod1-Lys7) were expressed well in *Escherichia coli*. Crude exts. and purified BbSod1-Mut from cell cultures exhibited much higher antioxidn. activities than the counterparts of BbSod1-Lys7 whereas BbSod1 showed no substantial activity. The engineered enzymes were best induced by overnight **incubation** at 20°C in Luria-Bertani medium including 2.5 mM Cu²⁺, 0.5 mM Zn²⁺ and 0.5 mM isopropyl-D-thiogalactopyranoside after 5-h growth to log-phase at 37°C. Our results highlight alternative means to producing highly active fungal Cu/Zn-SOD in *E. coli* by making use of the two site-directed mutations without chaperon.

Supplementary Terms: copper zinc superoxide dismutase Beauveria sequence antioxidn chaperon

Classification Codes

CA Section Code: Enzymes (7)

Section cross-reference(s): 3, 10

Indexing

Index Terms:

1246908-70-2, Dismutase, superoxide (**Beauveria bassiana** gene SOD)
Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)
amino acid sequence; characterization of a new Cu/Zn-superoxide dismutase from **Beauveria bassiana** and
two site-directed mutations crucial to its antioxidant activity without chaperon

1569268-91-2, Copper-zinc superoxide dismutase

7440-50-8, Copper

7440-66-6, Zinc

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

characterization of a new Cu/Zn-superoxide dismutase from **Beauveria bassiana** and two site-directed
mutations crucial to its antioxidant activity without chaperon

1246908-69-9, DNA (**Beauveria bassiana** gene SOD exon 1 3'-fragment plus exons 2-3 plus exon 4 5'-
fragment plus flanks)

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

nucleotide sequence; characterization of a new Cu/Zn-superoxide dismutase from **Beauveria bassiana** and
two site-directed mutations crucial to its antioxidant activity without chaperon

147-85-3, L-Proline

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

P143S and P145L; characterization of a new Cu/Zn-superoxide dismutase from **Beauveria bassiana** and two
site-directed mutations crucial to its antioxidant activity without chaperon

Antioxidants

Beauveria bassiana

DNA sequences

Protein engineering

Protein sequences

characterization of a new Cu/Zn-superoxide dismutase from **Beauveria bassiana** and two site-directed
mutations crucial to its antioxidant activity without chaperon

Microbial gene

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

sod; characterization of a new Cu/Zn-superoxide dismutase from **Beauveria bassiana** and two site-directed
mutations crucial to its antioxidant activity without chaperon

Dates

Entered STN: 26 Jan 2010

Last Update: 07 Nov 2015

Bibliographic Update: 26 Jan 2010

Indexing Update: 07 Nov 2015

19. Microbial metabolism of biologically active secondary metabolites from *Nerium oleander* L.

Author: Ibrahim, Amany; Khalifa, Sherief Ibrahim; Khafagi, Ishrak; Youssef, Daa Tohamy; Khan, Shabana; Mesbah, Mostafa; Khan, Ikhlas
Corporate Source: Suez Canal University Department of Pharmacognosy, Faculty of Pharmacy Ismailia 41522, Egypt (EG)
Source: Chemical & Pharmaceutical Bulletin (**20080930**), 56(9), pp. 1253-1258 *In English*
CODEN: CPBTAL
ISSN: 0009-2363
DOI: 10.1248/cpb.56.1253
Publisher: Pharmaceutical Society of Japan, Tokyo, Japan (JP)
Document Type: Journal
Document ID: 2008:1311925 (DN 150:51011)

Abstract

Ursolic acid (1) and kaempferol (3) are two major constituents of the Mediterranean plant *Nerium oleander*. Microbial metab. of (1) with *Aspergillus flavus* (ATCC 9170) resulted in the formation of 3-oxo-ursolic acid deriv., ursonic acid (2). On the other hand, *Cunninghamella blakesleeana* (ATCC 8688A) was able to convert (3) into kaempferol 3-O- β -D-glucopyranoside (4) as well as the new natural product kaempferol 4'-sulfate (5). **Incubation** of kaempferol with *Mucor ramannianus* (ATCC 9628) led to the isolation of one metabolite identified as kaempferol 4'-O- α -L-rhamnopyranoside (6). Transformation of kaempferol to the new compd. kaempferol 7-O- β -D-4-O-methylglucopyranoside (7) and herbacetin 8-O- β -D-glucopyranoside (8) was obsd. after fermn. with ***Beauveria bassiana*** (ATCC 13144). Cytotoxic as well as antioxidant activities of the isolated metabolites were detd.

Supplementary Terms: microbial metab *Nerium* secondary metabolite antioxidant cytotoxic agent

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Section cross-reference(s): 1, 11

Indexing

Index Terms:

77-52-1, Ursolic acid

Biological Study (BIOL) Biological Study, Unclassified (BSU) Pharmacological Activity (PAC) Properties (PRP) Therapeutic Use (THU) Uses (USES)
metab.; microbial metab. of biol. active secondary metabolites from *Nerium oleander*

520-18-3, Kaempferol

Biological Study (BIOL) Biological Study, Unclassified (BSU) Pharmacological Activity (PAC) Properties (PRP) Therapeutic Use (THU) Uses (USES)
microbial metab. of biol. active secondary metabolites from *Nerium oleander*

1092795-48-6

1092795-49-7

480-10-4, Kaempferol 3-O- β -D-glucopyranoside

62369-23-7, Kaempferol 4'-sulfate

6246-46-4, Ursonic acid

65063-32-3

Biological Study (BIOL) Biological Study, Unclassified (BSU) Pharmacological Activity (PAC) Properties (PRP)

Therapeutic Use (THU) Uses (USES)

microbial metabolite; microbial metab. of biol. active secondary metabolites from Nerium oleander

Animal cell

cytotoxicity of microbial metabolites; microbial metab. of biol. active secondary metabolites from Nerium oleander

Antioxidants

Antitumor agents

Aspergillus flavus

Beauveria bassiana

Cunninghamella blakesleeana

Cytotoxicity

Microorganism

Nerium oleander

Umbelopsis ramanniana

microbial metab. of biol. active secondary metabolites from Nerium oleander

Human

neoplasm, inhibition; microbial metab. of biol. active secondary metabolites from Nerium oleander

Metabolism, plant

secondary; microbial metab. of biol. active secondary metabolites from Nerium oleander

Neoplasm

inhibition; microbial metab. of biol. active secondary metabolites from Nerium oleander

Secondary metabolism

plant; microbial metab. of biol. active secondary metabolites from Nerium oleander

Dates

Entered STN: 03 Nov 2008

Last Update: 22 May 2016

Bibliographic Update: 03 Nov 2008

Indexing Update: 22 May 2016

20. Isolation and characterization of nucleotide excision repair deficient mutants of the entomopathogenic fungus, **Beauveria bassiana**

Author: Chelico, Linda; Khachatourians, George G.
Corporate Source: University of Saskatchewan Department of Applied Microbiology and Food Science, College of Agriculture Saskatoon, Saskatchewan (SK) S7N 5A8, Canada (CA)
Source: Journal of Invertebrate Pathology (**20080531**), 98(1), pp. 93-100 *In English*
CODEN: JIVPAZ
ISSN: 0022-2011
DOI: 10.1016/j.jip.2007.10.006
Publisher: Elsevier, San Diego, California (CA), United States (US)
Document Type: Journal
Document ID: 2008:572359 (DN 150:160797)

Abstract

To better understand DNA repair in the entomopathogenic fungus **Beauveria bassiana**, three UV light sensitive mutants were isolated and characterized to be deficient in nucleotide excision repair (NER). The UV sensitive mutants were scored by comparison to survival of the parental isolate, GK2016, after 36 J/m² UV-C irradiation. At this dose, conidial survival of GK2016 was 98% and the mutants LC75, LC194, and LC85 had survival values of 63%, 45%, and 31%, respectively. An immunological method which measured the removal of pyrimidine-(6-4)-pyrimidone photoproducts during repair confirmed the decreased ability of LC75, LC194, and LC85 to remove these UV-induced dimers by NER. The mutants were also found to be deficient in NER at swollen/germinating conidia and blastospore life cycle stages. The germination of the moderately UV sensitive mutant, LC75, was similar to that of the parental isolate, GK2016, after UV irradiation and **incubation** to enhance NER. The more sensitive mutants, LC194 and LC85 were 2.1- or 2.7-fold, respectively, less likely to germinate after UV irradiation based on their ability to carry out NER. These NER deficient mutants, the first to be derived from *B. bassiana*, reveal the importance of NER in spore survival post-UV irradiation.

Supplementary Terms: nucleotide excision repair blastospore germination *Beauveria*

Classification Codes

CA Section Code: Biochemical Genetics (3)

Section cross-reference(s): 10

Indexing

Index Terms:

Beauveria bassiana

DNA nucleotide excision repair

Germination

UV radiation

isolation and characterization of nucleotide excision repair deficient mutants of **Beauveria bassiana**

Spore

blastospore; isolation and characterization of nucleotide excision repair deficient mutants of **Beauveria bassiana**

Dates

Entered STN: 13 May 2008

Last Update: 30 Jul 2014

Bibliographic Update: 13 May 2008

Indexing Update: 30 Jul 2014

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21. Addition of exogenous carbon and nitrogen sources to aphid exuviae modulates synthesis of proteases and chitinase by germinating conidia of **Beauveria bassiana**

Author: Qazi, Sohail S.; Khachatourians, George G.

Corporate Source: University of Saskatchewan Microbial Biotechnology/Molecular Microbiology Labs, Department of Applied Microbiology and Food Science, College of Agriculture Saskatoon, Saskatchewan (SK), Canada (CA)

Source: Archives of Microbiology (**20080630**), 189(6), pp. 589-596 *In English*
CODEN: AMICCW
ISSN: 0302-8933

DOI: 10.1007/s00203-008-0355-9

Publisher: Springer, Heidelberg, Germany (DE)

Document Type: Journal

Document ID: 2008:557539 (DN 149:489353)

Abstract

Secretion of catabolic extracellular enzymes (ECE) is the hallmark of the infection of insects through the cuticle by entomopathogenic fungi (EPF). Here, the authors show that germinating conidia of **Beauveria bassiana** (Bb) regulate the synthesis of ECE through a multiple control mode during the initial stages of germination. They tested Bb conidial growth on aphid exuviae with or without supplementation of addnl. carbon and/or nitrogen (C/N) compds. To understand the interrelation between conidial germination during growth, the synthesis of ECE activity, free amino nitrogen (FAN), glucose and fungal dry wt. biomass were measured. Immediately (0.25 h) upon **incubation** of conidia, activity of subtilisin-like Pr1 and trypsin-like Pr2 enzymes and chitinase (NAGase) was obsd. in the culture filtrates. At 0.25 h, addn. of exogenous C-source resulted in higher activities of Pr1 and Pr2, resp. Conversely at 0.25 h, addn. of N-sources repressed the synthesis of Pr2, but that of Pr1. C/N repression was obsd. only for exponentially growing mycelia. NAGase

activity remained at basal level and unaffected by added C/N. It is concluded that C/N repression occurs only when it is necessary for the Bb infective structures to establish a nutritional relationship with the host structures.

Supplementary Terms: aphid carbon nitrogen source Beauveria protease chitinase

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Section cross-reference(s): 12

Indexing

Index Terms:

9001-06-3, Chitinase

9001-92-7, Proteinase

Biological Study (BIOL) Biological Study, Unclassified (BSU)

addn. of exogenous carbon and nitrogen sources to aphid exuviae modulates synthesis of proteases and chitinase by germinating conidia of **Beauveria bassiana**

Aphidoidea

Beauveria bassiana

Carbon sources, microbial

Nitrogen sources, microbial

Spore germination

addn. of exogenous carbon and nitrogen sources to aphid exuviae modulates synthesis of proteases and chitinase by germinating conidia of **Beauveria bassiana**

Spore

conidiospore; addn. of exogenous carbon and nitrogen sources to aphid exuviae modulates synthesis of proteases and chitinase by germinating conidia of **Beauveria bassiana**

Dates

Entered STN: 09 May 2008

Last Update: 20 Nov 2008

Bibliographic Update: 09 May 2008

Indexing Update: 20 Nov 2008

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22. Adsorption and biodegradation of the herbicide fluometuron in liquid media

Author: Romeh, A. A.

Corporate: Zagazig Univ. Plant Production Dept., Efficient Productivity Inst. Egypt (EG)

Source:

Source: Journal of Environmental Research (**2006**), 7 pp. 29-47 *In English*
CODEN: JEMRF7

Publisher: Council for Community Services and Environmental Development, Zagazig University,
Zagazig, Egypt (EG)

Document Type: Journal

Document ID: 2008:216457 (DN 150:10042)

Abstract

The adsorption of fluometuron herbicide by 7 adsorbent substances with various phys. and chem. properties was studied. The biodegrdn. of fluometuron by *Trichoderma viride*, *Metarhizium anisopliae* and ***Beauveria bassiana*** was also studied. The data showed that the adsorption capacities (K_f values) of activated charcoal, peat-moss, kaolinite, rice straw ash, cement kiln dust, waterlens and pentonite for fluometuron were 223.872, 63.095, 1.995, 1.259, 0.562, 0.316 and 0.224, resp. IR spectra showed the adsorption mechanisms between fluometuron and adsorbent substances used. The degrdn. percentage of fluometuron by *M. anisopliae*, *B. bassiana* and *T. viride* were 93.86, 89.76 and 85.82% compared with 32.08% in uninoculated liq. media after 16 days of treatment. Medium degrdn. time (DT_{50}) of fluometuron by *M. anisopliae*, *B. bassiana* and *T. viride* were 3.0, 3.5 and 4.0 days, resp. compared with 29 days in uninoculated medium. After 4 days of **incubation** the percentage increase of the fungal biomass for *M. anisopliae*, *B. bassiana* and *T. viride* were 237.75, 65.71 and 107.82%, resp.

Supplementary Terms: adsorption biodegrdn herbicide fluometuron water wastewater

Classification Codes

CA Section Code: Waste Treatment And Disposal (60)

Section cross-reference(s): 5

Indexing**Index Terms:**

1318-74-7, Kaolinite

Other Use, Unclassified (NUU) Uses (USES)

adsorption and biodegrdn. of herbicide fluometuron in liq. media

2164-17-2, Fluometuron

Process (PROC) Removal or Disposal (REM)

adsorption and biodegrdn. of herbicide fluometuron in liq. media

Activated charcoal

Other Use, Unclassified (NUU) Uses (USES)

adsorption and biodegrdn. of herbicide fluometuron in liq. media

Adsorptive wastewater treatment

Ashes (residues)

Beauveria bassiana

Biological wastewater treatment

Cement kiln dust
Herbicides
Metarhizium anisopliae
Rice straw
Sphagnum
Trichoderma viride
adsorption and biodegrdn. of herbicide fluometuron in liq. media

Rice
straw; adsorption and biodegrdn. of herbicide fluometuron in liq. media

Dates

Entered STN: 21 Feb 2008
Last Update: 26 Mar 2016
Bibliographic Update: 21 Feb 2008
Indexing Update: 26 Mar 2016

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23. Enhanced frequency of **Beauveria bassiana** blastospore transformation by restriction enzyme-mediated integration and electroporation

Author: Jiang, Qiong; Ying, Sheng-Hua; Feng, Ming-Guang
Corporate Source: Zhejiang University Institute of Microbiology, College of Life Sciences Hangzhou, Zhejiang 310058, China (CN)
Source: Journal of Microbiological Methods (**20070630**), 69(3), pp. 512-517 *In English*
CODEN: JMIMDQ
ISSN: 0167-7012
DOI: 10.1016/j.mimet.2007.03.005
Publisher: Elsevier B.V., Amsterdam, Netherlands (NL)
Document Type: Journal
Document ID: 2007:495287 (DN 148:46694)

Abstract

The techniques of restriction enzyme-mediated integration (REMI) and electroporation (EP) were applied for the first time to improving the blastospore transformation of fungal biocontrol agent **Beauveria bassiana** for higher frequency. The blastospores from ≤ 24 h **incubation** in glucose-mineral medium after shaking conidia for 48 h in Subouraud dextrose broth were found most competent for integrating 1 μ g plasmid DNA vectoring the phosphinothricin (PPT) resistance gene bar in 360 μ L reaction system contg. 100 U HindIII or XbaI. Such blastospores were also most suitable for EP transformation at the optimized field strength of 10 kV cm⁻¹. The

optimized REMI and EP generated averagely 39 and 53 transformants μg^{-1} plasmid DNA whereas polyethylene glycol (PEG) integration yielded only 22. All transformants grew well on Czapek's agar contg. 400 μg PPT mL^{-1} after three rounds of cultivation on the same agar excluding PPT but their parental strain showed no resistance. The target gene inserted into the genomes of 10 transformants randomly taken from REMI or EP transformation was consistently detected by both PCR and Southern blotting. Compared to the PEG integration, REMI and EP enhanced the frequency of the blastospore transformation by 73 and 137%, resp.

Supplementary Terms: restriction enzyme mediated integration electroporation *Beauveria* blastospore transformation

Classification Codes

CA Section Code: Biochemical Genetics (3)

Section cross-reference(s): 10

Indexing

Index Terms:

81295-22-9, Restriction endonuclease HindIII

81295-42-3, Restriction endonuclease XbaI

Biological Study (BIOL) Biological Use, Unclassified (BUU) Uses (USES)

enhanced frequency of *Beauveria bassiana* blastospore transformation by restriction enzyme-mediated integration and electroporation

35597-44-5, Phosphinothricin

Biological Study (BIOL) Biological Use, Unclassified (BUU) Uses (USES)

selection agent; enhanced frequency of *Beauveria bassiana* blastospore transformation by restriction enzyme-mediated integration and electroporation

Beauveria bassiana

Electroporation

Genetic integration

Plasmid vectors

Transformation (genetic)

enhanced frequency of *Beauveria bassiana* blastospore transformation by restriction enzyme-mediated integration and electroporation

Microbial gene

Biological Study (BIOL) Biological Use, Unclassified (BUU) Uses (USES)

bar; phosphinothricin resistance; enhanced frequency of *Beauveria bassiana* blastospore transformation by restriction enzyme-mediated integration and electroporation

Selection markers

phosphinothricin resistance gene bar; enhanced frequency of *Beauveria bassiana* blastospore transformation by restriction enzyme-mediated integration and electroporation

Spore

blastospore; enhanced frequency of *Beauveria bassiana* blastospore transformation by restriction enzyme-mediated integration and electroporation

Dates

Entered STN: 07 May 2007
Last Update: 26 May 2017
Bibliographic Update: 07 May 2007
Indexing Update: 26 May 2017

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24. Enantioselective benzylic microbial hydroxylation of indan and tetralin

Author: Limberger, Renata P.; Ursini, Cleber V.; Moran, Paulo J. S.; Rodrigues, J. Augusto R.
Corporate Source: Universidade Federal do Rio Grande do Sul Programa de Pos-Graduacao em Ciencias Farmaceuticas, Faculdade de Farmacia Porto Alegre-RS 90610-000, Brazil (BR)
Source: Journal of Molecular Catalysis B: Enzymatic (**20070502**), 46(1-4), pp. 37-42 *In English*
CODEN: JMCEF8
ISSN: 1381-1177
DOI: 10.1016/j.molcatb.2007.02.003
Publisher: Elsevier B.V., Amsterdam, Netherlands (NL)
Document Type: Journal
Document ID: 2007:393396 (DN 147:141525)

Abstract

A screening with 15 strains of bacteria and fungi targeted at the prodn. of specific hydroxylated benzylic derivs. of indan 1 and tetralin 2 was carried out. *Mortierella isabellina*, *Mortierella ramanniana* and ***Beauveria bassiana*** were shown to mediate the resp. conversions to 1-indanol (3) and 1-tetralol (4), the most satisfactory results being obtained with *M. isabellina*, which gave 78% conversion of 1 to (1R)-3 (64% yield, 86% ee) after a 2-day-**incubation**, and 52% conversion of 2 to (1R)-4 (38% yield, 92% ee) in a 4-day-**incubation**. Over-oxidn. of alcs. 3 and 4 during the reactions resulted on the formation of 1-indanone and 2-tetralone, resp.

Supplementary Terms: indan tetralin microbial hydroxylation enantioselective

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:
119-64-2, Tetralin
496-11-7, Indan

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)
enantioselective benzylic microbial hydroxylation of indan and tetralin

23357-45-1P, R-1 Tetralol

697-64-3P, R-1-Indanol

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR)

enantioselective benzylic microbial hydroxylation of indan and tetralin

530-93-8P, 2-Tetralone

83-33-0P, 1-Indanone

Byproduct (BYP) Preparation (PREP)

enantioselective benzylic microbial hydroxylation of indan and tetralin

530-91-6P

6351-10-6P

Preparation (PREP) Synthetic Preparation (SPN)

enantioselective benzylic microbial hydroxylation of indan and tetralin

Beauveria bassiana

Culture media

Mortierella isabellina

Oxidation

Temperature effects, biological

Umbelopsis ramanniana

enantioselective benzylic microbial hydroxylation of indan and tetralin

Hydroxylation

regioselective; enantioselective benzylic microbial hydroxylation of indan and tetralin

Hydroxylation

stereoselective; enantioselective benzylic microbial hydroxylation of indan and tetralin

pH

biol. effects; enantioselective benzylic microbial hydroxylation of indan and tetralin

Dates

Entered STN: 09 Apr 2007

Last Update: 02 Aug 2007

Bibliographic Update: 09 Apr 2007

Indexing Update: 02 Aug 2007

25. Fungal biosynthesis of endochitinase and chitobiase in solid state fermentation and their application for the production of N-acetyl-D-glucosamine from colloidal chitin

Author: Binod, Parameswaran; Sandhya, Chandran; Suma, Pradeep; Szakacs, George; Pandey, Ashok
Corporate Source: Regional Research Laboratory, CSIR Biotechnology Division Trivandrum 695 019, India (IN)
Source: Bioresource Technology (**20071031**), 98(14), pp. 2742-2748 *In English*
CODEN: BIRTEB
ISSN: 0960-8524
DOI: 10.1016/j.biortech.2006.09.030
Publisher: Elsevier B.V., Amsterdam, Netherlands (NL)
Document Type: Journal
Document ID: 2007:382105 (DN 147:71096)

Abstract

The present study was directed to the prodn. of N-acetyl-D-glucosamine using endochitinase and chitobiase from fungal cultures in solid culturing. Fifteen fungal strains were evaluated for endochitinase and chitobiase prodn. under solid-state fermn. using agro-industrial residues, of which *Penicillium aculeatum* NRRL 2129 showed max. endochitinase activity whereas *Trichoderma harzianum* TUBF 927 showed max. chitobiase activity. Eleven substrates, alone and in combination with chitin, were evaluated for the enzyme prodn. Optimization of physico-chem. parameters such as **incubation** period and initial moisture content, and nutritional parameters such as chitin source, inorg. and org. nitrogen sources, were carried out. Optimization resulted in more than 3-fold increase in endochitinase prodn. (from 3.5 to 12.53 U/g dry wt. of substrate) and about 1.5-fold increase in chitobiase prodn. (from 1.6 to 2.25 U/g dry wt. of substrate). Studies on the degrdn. of colloidal chitin to N-acetyl-D-glucosamine showed improved efficiency when endochitinase and chitobiase were used in combination.

Supplementary Terms: fungal solid state ferm n chitinase chitobiase acetylglucosamine chitin

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:

9001-06-3P, Endochitinase

9012-33-3P, Chitobiase

Biochemical Process (BCP) Bioindustrial Manufacture (BMF) Biological Study (BIOL) Catalyst Use (CAT)

Preparation (PREP) Process (PROC) Uses (USES)

fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

1398-61-4, Chitin

7512-17-6, N-Acetyl-D-glucosamine

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC) Reactant (RCT) Reactant or Reagent (RACT)

fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

57-13-6, Urea

7631-99-4, Sodium nitrate

7783-20-2, Ammonium sulfate

7783-28-0, Diammonium phosphate

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

Beauveria bassiana

Beef meat extract

Enzymic hydrolysis

Nitrogen sources, microbial

Peanut meal cake

Penicillium aculeatum

Penicillium funiculosum

Penicillium pinophilum

Rice husk

Solid state fermentation

Soybean meal

Trichoderma harzianum

Wheat bran

Yeast extract

fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

Caseins

Peptones

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

Industrial liquors

corn steep liquor; fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

Oilseed cake

coconut; fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

Shell

prawn, powd.; fungal biosynthesis of endochitinase and chitobiase in solid state fermn. and their application for prodn. of N-acetyl-D-glucosamine from colloidal chitin

Dates

Entered STN: 05 Apr 2007
Last Update: 12 Feb 2018
Bibliographic Update: 05 Apr 2007
Indexing Update: 12 Feb 2018

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26. Preparation of optically active α -hydroxycarboxylic acid by enzymic resolution

Inventor: Sakamoto, Keiji; Kita, Shinji; Morii, Akihiro
Patent Assignee: Daiichi Fine Chemical Co., Ltd., Japan (JP)
Source: PCT Int. Appl. pp. 43 *In Japanese*
 CODEN: PIXXD2
Document Type: Patent
Document ID: 2007:259631 (DN 146:250419)

Patent Information

Publication			Application		Priority	
Number	Kind	Date	Number	Date	Number	Date
WO2007026860	A1	20070308	WO2006-JP317303	20060901	JP2005-254423	20050902

Patent Family

CAplus Extended Family Count: 1
 2007:259631

Country count: 131
Patent Number Count: 5
 [Country Count and Patent Number Count are based on CAplus family]

Publication			Application		Priority		Update
Number	Kind	Date	Number	Date	Number	Date	Date
WO2007026860	A1	20070308	WO2006-JP317303	20060901	JP2005-254423	20050902	09 Mar 2007
AE, AG, AL, AM, AT, AU, AZ, BA, BB, BE, BF, BG, BJ, BR, BW, BY, BZ, CA, CF, CG, CH, CI, CM, CN, CO, CR, CU, CY, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, FR, GA, GB, GD, GE, GH, GM, GN, GQ, GR, GW, HN, HR, HU, ID, IE, IL, IN, IS, IT, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MC, MD, MG, MK, ML, MN, MR, MW, MX, MY, MZ, NA, NE, NG, NI, NL, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SI, SK, SL, SM, SN, SV, SY, SZ, TD, TG, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW							

EP1930441	A1	20080611	EP2006-797245	20060901	JP2005-254423 WO2006-JP317303	20050902 20060901	11 Jun 2008
CN101253271	A	20080827	CN2006-80031900	20080229	JP2005-254423 WO2006-JP317303	20050902 20060901	28 Aug 2008
IN2008CN01622	A	20081205	IN2008-CN1622	20080401	JP2005-254423 WO2006-JP317303	20050902 20060901	10 Dec 2008
US20080311636	A1	20081218	US2008-65006	20080516	JP2005-254423 WO2006-JP317303	20050902 20060901	18 Dec 2008

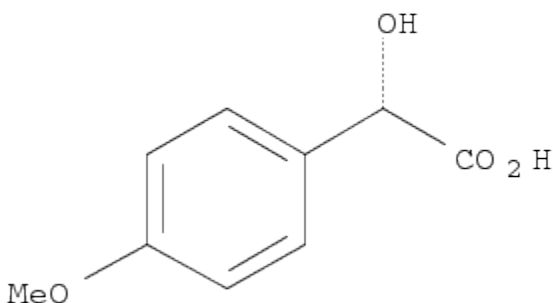
[* indicates basic patents]

Patent Classifications

Publication Number	Kind	Class	Classification Codes
WO2007026860*	A1	IPCI IPCR CPC ECLA	C12P0041/00; C12P0041/00 C12P0041/00 C12P0007/42; C12P0007/56; C12P0007/62; C12P0041/00 C12P7/42; C12P7/56; C12P7/62; C12P41/00
EP1930441	A1	IPCI IPCR CPC ECLA	C12P0041/00 C12P0041/00 C12P0007/42; C12P0007/56; C12P0007/62; C12P0041/00 C12P7/42; C12P7/56; C12P7/62; C12P41/00
CN101253271	A	IPCI IPCR CPC ECLA	C12P0041/00 C12P0041/00 C12P0007/42; C12P0007/56; C12P0007/62; C12P0041/00 C12P7/42; C12P7/56; C12P7/62; C12P41/00
IN2008CN01622	A	IPCI	C12P0041/00
US20080311636	A1	IPCI	C12P0007/42; C07D0471/02
		IPCR	C12P0007/42; C07D0471/02
		CPC	C12P0007/42; C12P0007/56; C12P0007/62; C12P0041/00
		USPCI	435146000; 546114000
		USPCC	435146000; 546114000

[* indicates basic patents]

Abstract



Disclosed is a method for efficient prodn. of optically active α-hydroxycarboxylic acids, useful intermediates for drugs and agrochems. The method comprises **incubation** of racemic mixt. of α-hydroxycarboxylic acid ester with a cell or culture of a microorganism belonging to the genus *Leifsonia*, *Cylindrocarpon* or *Verticillium* or a product produced by treating the cell or culture or an ext. from the cell or culture.

Supplementary Terms: hydroxycarboxylate enzymic resolu *Leifsonia* *Cylindrocarpon* *Verticillium*

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Section cross-reference(s): 1, 5

Indexing

Index Terms:

100126-95-2

127709-19-7

13305-14-1

13305-18-5

13305-19-6

13511-30-3

156276-21-0

156276-22-1

20731-95-7, Atrolactic acid methyl ester

887641-48-7

Biological Study (BIOL) Biological Study, Unclassified (BSU) Reactant (RCT) Reactant or Reagent (RACT)

prepn. of optically active α -hydroxycarboxylic acid by enzymic resolu.

13113-71-8P, (S)-Atrolactic acid

196302-06-4P, (S)-4-Trifluoromethylmandelic acid

20714-89-0P, (R)-4-Methoxymandelic acid

32189-36-9P, (R)-4-Chloromandelic acid

32222-45-0P, (R)-4-Fluoromandelic acid

3966-30-1P, (R)-Atrolactic acid

51380-14-4P, (R)-4-Trifluoromethylmandelic acid

52923-24-7P, (S)-3-Fluoromandelic acid

52923-25-8P, (S)-4-Fluoromandelic acid

52950-18-2P, (R)-2-Chloromandelic acid

61008-98-8P

75172-66-6P, (S)-4-Methoxymandelic acid

Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP)

prepn. of optically active α -hydroxycarboxylic acid by enzymic resolu.

52950-19-3P, (S)-2-Chloromandelic acid

Preparation (PREP) Synthetic Preparation (SPN)

prepn. of optically active α -hydroxycarboxylic acid by enzymic resolu.

Agrochemicals

Aspergillus

Aspergillus ochraceus

Bacillus (bacterium genus)

Bacillus cereus

Beauveria

Beauveria bassiana

Brevundimonas

Brevundimonas diminuta

Cylindrocarpon

Drugs

Enzymic resolution

Exophiala

Exophiala dermatitidis

Exophiala jeanselmei

Fermentation

Gordonia (bacterium)

Gordonia bronchialis

Gordonia rubripertincta

Gordonia sputi

Leifsonia

Leifsonia aquatica

Lysinibacillus fusiformis

Mycobacterium

Mycobacterium phlei

Mycobacterium smegmatis

Mycobacterium vaccae

Nocardia

Nocardia asteroides

Nocardia globerula
Penicillium
Penicillium spinulosum
Pseudomonas
Pseudomonas aeruginosa
Ramichloridium anceps
Rhinocladiella
Rhinocladiella atrovirens
Rhizobium
Rhizobium radiobacter
Rhodococcus (bacterium)
Rhodococcus erythropolis
Rhodococcus fascians
Rhodococcus hoagii
Rhodococcus rhodochrous
Rhodococcus wratislaviensis
Rhodotorula
Rhodotorula aurantiaca
Verticillium
Verticillium leptobactrum
Zasmidium cellare
prepn. of optically active α -hydroxycarboxylic acid by enzymic resolu.

Carboxylic esters

Biological Study (BIOL) Biological Study, Unclassified (BSU) Reactant (RCT) Reactant or Reagent (RACT)
 α -hydroxy; prepn. of optically active α -hydroxycarboxylic acid by enzymic resolu.

Hydroxycarboxylic acids

Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP)
prepn. of optically active α -hydroxycarboxylic acid by enzymic resolu.

Markush Indexing (1)

MARPAT Structures

Structure 1, Diagram 1 (Claim 1)

Dates

Entered STN:	09 Mar 2007
Last Update:	05 Aug 2018
Bibliographic Update:	09 Mar 2007
Patent Family Update:	18 Dec 2008
Indexing Update:	05 Aug 2018

27. Microbial Transformation of Amino- and Hydroxyanthraquinones by **Beauveria bassiana** ATCC 7159

Author: Zhan, Jixun; Gunatilaka, A. A. Leslie
Corporate Source: University of Arizona Southwest Center for Natural Products Research and Commercialization, Office of Arid Lands Studies, College of Agriculture and Life Sciences Tucson, Arizona (AZ) 85706-6800, United States (US)
Source: Journal of Natural Products (**20061031**), 69(10), pp. 1525-1527 *In English*
CODEN: JNPRDF
ISSN: 0163-3864
DOI: 10.1021/np060339k
Publisher: American Chemical Society-American Society of Pharmacognosy, Washington, District of Columbia (DC), United States (US)
Document Type: Journal
Document ID: 2006:1079296 (DN 146:6393)

Abstract

Microbial biotransformation of four amino- and hydroxyanthraquinones catalyzed by **Beauveria bassiana** ATCC 7159 has been studied. **Incubation** of 1,2-diaminoanthraquinone (1) with B.Bassiana ATCC 7159 afforded 1-amino-2-(4'-O-methyl-2 β -N-D-glucopyranosylamino)anthraquinone (5) in a hitherto unprecedented biotransformation involving N-glycosylation of an amine. Biotransformation of 1-aminoanthraquinone (2) yielded 1-amino-2-(4'-O-methyl-2 β -O-D-glucopyranosyloxy)anthraquinone (6) as a result of microbial hydroxylation of C-2 followed by 4'-O-methyl-glucosylation of the newly introduced hydroxyl group. 1,8-Dihydroxyanthraquinone (3) and 1,2-dihydroxyanthraquinone (4) afforded 8-hydroxy-1-(4'-O-methyl-1 β -O-D-glucopyranosyloxy)anthraquinone (7) and 1-hydroxy-2-(4'-O-methyl-2 β -O-D-glucopyranosyloxy)anthraquinone (8), resp., resulting from 4'-O-methyl-glucosylation of the existing hydroxyl groups of the substrates. The efficiency of these conversions suggests that microbial biotransformation reactions offer an attractive alternative to chem. 4'-O-methyl-glucosylation of amino- and hydroxyanthraquinones.

Supplementary Terms: Beauveria biotransformation anthraquinone

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:

117-10-2, 1,8-Dihydroxyanthraquinone

1758-68-5, 1,2-Diaminoanthraquinone

72-48-0, 1,2-Dihydroxyanthraquinone

82-45-1, 1-Aminoanthraquinone

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

biotransformation of amino- and hydroxyanthraquinones by **Beauveria bassiana**

1000153-17-2P

915791-39-8P

915791-40-1P

915791-41-2P

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR)

biotransformation of amino- and hydroxyanthraquinones by **Beauveria bassiana**

4132-38-1

Reactant (RCT) Reactant or Reagent (RACT)

biotransformation of amino- and hydroxyanthraquinones by **Beauveria bassiana****Beauveria bassiana**

Glycosylation

Hydroxylation

Methylation

biotransformation of amino- and hydroxyanthraquinones by **Beauveria bassiana**

Dates

Entered STN: 17 Oct 2006**Last Update:** 18 Nov 2017**Bibliographic Update:** 17 Oct 2006**Indexing Update:** 18 Nov 2017CAplusSM Copyright © 2019 ACS on STN**28. Microbial transformation of 10-deacetylbaccatin III (10-DAB) by Curvularia lunata and Trametes hirsuta**

Author: Arnone, Alberto; Bava, Adriana; Alemani, Stefano; Nasini, Gianluca; Bombardelli, Ezio; Fontana, Gabriele

Corporate Source: CNR-ICRM Dipartimento di Chimica, Materiali ed Ingegneria Chimica del Politecnico Milan I-20131, Italy (IT)

Source: Journal of Molecular Catalysis B: Enzymatic (**20061102**), 42(3-4), pp. 95-98 *In English*
CODEN: JMCEF8
ISSN: 1381-1177

DOI: 10.1016/j.molcatb.2006.07.006

Publisher: Elsevier B.V., Amsterdam, Netherlands (NL)

Document Type: Journal

Document ID: 2006:1052008 (DN 146:420439)

Abstract

The microbial transformation of 10-deacetylbaccatin III (10-DAB) (1a) and 13-DeBAC (4b) was investigated. *Trametes hirsuta* induced 13-oxidn. of 10-DAB to give (4a) in high yield, whereas **incubation** with *Curvularia lunata* resulted in the isolation of the 7-epi-10-DAB (2) and the 7-epi-10-oxo-10-DAB (3). 13-DeBAC (4b) was biotransformed into compds. (4a) and (4c) by *Alternaria alternata*.

Supplementary Terms: microbial biotransformation deacetylbaccatin

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Section cross-reference(s): 29

Indexing

Index Terms:

27548-93-2, Baccatin III

32981-86-5, 10-Deacetylbaccatin III

32981-89-8

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

microbial transformation of 10-deacetylbaccatin III (10-DAB) by *Curvularia lunata* and *Trametes hirsuta*

151636-94-1P

71629-92-0P, 7-Epi-10-deacetylbaccatin III

76497-09-1P

92950-42-0P

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR)

microbial transformation of 10-deacetylbaccatin III (10-DAB) by *Curvularia lunata* and *Trametes hirsuta*

Absidia coerulea

Alternaria alternata

Beauveria bassiana

Botrytis cinerea

Cunninghamella echinulata echinulata

Curvularia lunata

Epicoccum

Fermentation

Fusarium equiseti

Mucor circinelloides

Mucor hiemalis

Mucor plumbeus

Ophiobolus herpotrichus

Penicillium adametzii

Pseudomonas fluorescens

Streptomyces catenulae

Streptomyces griseus

Trametes hirsuta

microbial transformation of 10-deacetylbaccatin III (10-DAB) by *Curvularia lunata* and *Trametes hirsuta*

Taxanes

Biochemical Process (BCP) Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP) Process (PROC) Properties (PRP) Purification or Recovery (PUR)

microbial transformation of 10-deacetylbaccatin III (10-DAB) by *Curvularia lunata* and *Trametes hirsuta*

Dates

Entered STN: 10 Oct 2006

Last Update: 10 May 2007

Bibliographic Update: 10 Oct 2006

Indexing Update: 10 May 2007

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29. Sludge liming decreases the growth of keratinolytic and keratinophilic fungi

Author: Ulfig, K.

Corporate Source: Institute for Ecology of Industrial Areas

Source: Polish Journal of Environmental Studies (**2006**), 15(2), pp. 341-346 *In English*
CODEN: PJESE2
ISSN: 1230-1485

Publisher: HARD Publishing Co., Olsztyn, Poland (PL)

Document Type: Journal

Document ID: 2006:512390 (DN 145:194489)

Abstract

Due to the content of pathogenic organisms, including fungi, sewage sludge land application poses risks to both human health and the environment. One of the ways for reducing pathogens in sludge is liming. This study aims to det. the effect of sludge liming on the compn. of keratinolytic and keratinophilic fungi in model expts. The fungi were examd. using the hair baiting method and the diln. method with **incubation** on a Wiegand medium supplemented with chloramphenicol (100 mg/L) and actidione (500 mg/L). The sludge liming considerably decreased the no. of actidione-resistant fungi propagules and eliminated many fungal species, including *Pseudallescheria boydii*. The influence of this process on hair-baited fungi was that the liming eliminated keratinolytic and keratinophilic fungi at 37°C. In the range of 23-33°C, the liming considerably restricted the growth of keratinolytic fungi, including *Microsporum gypseum*, but only slightly affected keratinophilic fungi, including *Pseudallescheria boydii*. The sludge liming decreases the risk posed by geophilic dermatophytes and other keratinolytic fungi, as well as by keratinophilic fungi to humans and the environment. The process affected more keratinolytic fungi than keratinophilic ones.

Supplementary Terms: wastewater treatment sludge liming keratinolytic keratinophilic fungi growth

Classification Codes

CA Section Code: Waste Treatment And Disposal (60)

Section cross-reference(s): 10

Indexing

Index Terms:

Agonomycetales

Aphanoascus clathratus

Aphanoascus fulvescens

Aphanoascus reticulispore

Arthroderma quadrifidum

Arthrographis kalrae

Aspergillus fumigatus

Beauveria bassiana

Chrysosporium

Chrysosporium keratinophilum

Chrysosporium zonatum

Fusarium solani

Gymnoascus petalosporus

Gymnoascus reticulatus

Health hazard

Human

Microsporum gypseum

Narasimhella hyalinospora

Paecilomyces lilacinus

Paecilomyces marquandii

Penicillium janczewskii

Phialophora melinii

Pseudallescheria boydii

Trichoderma koningii

Trichophyton terrestre

Wastewater treatment sludge

detg. effect of sewage sludge liming on compn. of keratinolytic and keratinophilic fungi in model expts.

Fungi

keratinolytic; detg. effect of sewage sludge liming on compn. of keratinolytic and keratinophilic fungi in model expts.

Fungi

keratinophilic; detg. effect of sewage sludge liming on compn. of keratinolytic and keratinophilic fungi in model expts.

Skin-infecting fungi

geophilic; detg. effect of sewage sludge liming on compn. of keratinolytic and keratinophilic fungi in model expts.

Wastewater treatment

liming; detg. effect of sewage sludge liming on compn. of keratinolytic and keratinophilic fungi in model expts.

Dates

Entered STN: 01 Jun 2006
Last Update: 24 Aug 2006
Bibliographic Update: 01 Jun 2006
Indexing Update: 24 Aug 2006

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30. Adhesion of the entomopathogenic fungus *Beauveria* (*Cordyceps*) *bassiana* to substrata

Author: Holder, Diane J.; Keyhani, Nemat O.
Corporate Source: University of Florida Department of Microbiology and Cell Science Gainesville, Florida (FL) 32611, United States (US)
Source: Applied and Environmental Microbiology (**20050930**), 71(9), pp. 5260-5266 *In English*
CODEN: AEMIDF
ISSN: 0099-2240
DOI: 10.1128/aem.71.9.5260-5266.2005
Publisher: American Society for Microbiology, Washington, District of Columbia (DC), United States (US)
Document Type: Journal
Document ID: 2005:1022404 (DN 143:435822)

Abstract

The entomopathogenic fungus *Beauveria bassiana* produces at least three distinct single-cell propagules, aerial conidia, vegetative cells termed blastospores, and submerged conidia, which can be isolated from agar plates, from rich broth liq. cultures, and under nutrient limitation conditions in submerged cultures, resp. Fluorescently labeled fungal cells were used to quantify the kinetics of adhesion of these cell types to surfaces having various hydrophobic or hydrophilic properties. Aerial conidia adhered poorly to weakly polar surfaces and rapidly to both hydrophobic and hydrophilic surfaces but could be readily washed off the latter surfaces. In contrast, blastospores bound poorly to hydrophobic surfaces, forming small aggregates, bound rapidly to hydrophilic surfaces, and required a longer **incubation** time to bind to weakly polar surfaces than to hydrophilic surfaces. Submerged conidia displayed the broadest binding specificity, adhering to hydrophobic, weakly polar, and hydrophilic surfaces. The adhesion of the *B. bassiana* cell types also differed in sensitivity to glycosidase and protease treatments, pH, and addn. of various carbohydrate competitors and detergents. The outer cell wall layer of aerial conidia contained SDS-insol., trifluoroacetic acid-sol. proteins (presumably hydrophobins) that were not present on either blastospores or submerged conidia. The variations in the cell surface properties leading to the different adhesion qualities of *B. bassiana* aerial conidia, blastospores, and

submerged conidia could lead to rational design decisions for improving the efficacy and possibly the specificity of entomopathogenic fungi for host targets.

Supplementary Terms: Beauveria entomopathogenic fungus adhesion surface hydrophilicity hydrophobicity; hydrophobin Beauveria conidia blastospore adhesion carbohydrate; glucose galactose lactose maltose melibiose trehalose acetylglucosamine Beauveria adhesion; hydrogen amylase cellulase laminarinase detergent Beauveria adhesion; pronase E protease K Beauveria adhesion virulence

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

12408-02-5, Hydrogen ion

Biological Study (BIOL) Biological Study, Unclassified (BSU)

adhesion of entomopathogenic fungus **Beauveria bassiana** aerial conidia, blastospores, and submerged conidia to hydrophobic and hydrophilic surfaces

39450-01-6

50-99-7, D-Glucose

585-99-9, Melibiose

59-23-4, D-Galactose

63-42-3, Lactose

69-79-4, Maltose

7512-17-6, N-Acetylglucosamine

9000-90-2, α -Amylase

9012-54-8, Cellulase

9025-37-0, Laminarinase

9036-06-0, Pronase E

99-20-7, Trehalose

Biological Study (BIOL) Biological Study, Unclassified (BSU)

sensitivity of adhesion of *B. bassiana* to hydrophobic and hydrophilic surfaces to glycosidase and protease treatments, pH, and addn. of various carbohydrates and detergents

Adhesion, biological

Beauveria bassiana

Hydrophilicity

Hydrophobicity

Virulence (microbial)

adhesion of entomopathogenic fungus **Beauveria bassiana** aerial conidia, blastospores, and submerged conidia to hydrophobic and hydrophilic surfaces

Carbohydrates

Biological Study (BIOL) Biological Study, Unclassified (BSU)

sensitivity of adhesion of *B. bassiana* to hydrophobic and hydrophilic surfaces to glycosidase and protease treatments, pH, and addn. of various carbohydrates and detergents

Cell aggregation

Spore

blastospore; adhesion of entomopathogenic fungus **Beauveria bassiana** aerial conidia, blastospores, and submerged conidia to hydrophobic and hydrophilic surfaces

Cell wall

outer membrane; adhesion of entomopathogenic fungus **Beauveria bassiana** aerial conidia, blastospores, and submerged conidia to hydrophobic and hydrophilic surfaces

Detergents

anionic; sensitivity of adhesion of *B. bassiana* to hydrophobic and hydrophilic surfaces to glycosidase and protease treatments, pH, and addn. of various carbohydrates and detergents

Detergents

cationic; sensitivity of adhesion of *B. bassiana* to hydrophobic and hydrophilic surfaces to glycosidase and protease treatments, pH, and addn. of various carbohydrates and detergents

Detergents

nonionic; sensitivity of adhesion of *B. bassiana* to hydrophobic and hydrophilic surfaces to glycosidase and protease treatments, pH, and addn. of various carbohydrates and detergents

Fungi

entomopathogenic; adhesion of entomopathogenic fungus **Beauveria bassiana** aerial conidia, blastospores, and submerged conidia to hydrophobic and hydrophilic surfaces

Proteins

Biological Study (BIOL) Biological Study, Unclassified (BSU)

hydrophobin; adhesion of entomopathogenic fungus **Beauveria bassiana** aerial conidia, blastospores, and submerged conidia to hydrophobic and hydrophilic surfaces

Spore

conidiospore; adhesion of entomopathogenic fungus **Beauveria bassiana** aerial conidia, blastospores, and submerged conidia to hydrophobic and hydrophilic surfaces

Surface

sensitivity of adhesion of *B. bassiana* to hydrophobic and hydrophilic surfaces to glycosidase and protease treatments, pH, and addn. of various carbohydrates and detergents

Dates

Entered STN: 22 Sep 2005

Last Update: 01 Dec 2005

Bibliographic Update: 22 Sep 2005

Indexing Update: 01 Dec 2005

31. Potential of oil-based formulations of *Beauveria bassiana* to control *Triatoma infestans*

Author: Luz, C.; Batagin, I.
Corporate Source: Universidade Federal de Goias (UFG) DMIPP, Instituto de Patologia Tropical e Saude Publica Goiania 74001-970, Brazil (BR)
Source: Mycopathologia (**20050831**), 160(1), pp. 51-62 *In English*
CODEN: MYCPAH
ISSN: 0301-486X
DOI: 10.1007/s11046-005-0210-3
Publisher: Springer, Dordrecht, Netherlands (NL)
Document Type: Journal
Document ID: 2005:1000515 (DN 145:141002)

Abstract

The in vitro development of *Beauveria bassiana* conidia was monitored when immersed in six concns. of seven non-ionic (MP 6400, MP 600, Renex 60, Renex 95, Span 80, Tween 20 and Tween 80) and three anionic (DOS 75, Hostapaval BVQ 9 and Surfax 220) surfactants and 11 vegetable oils (linseed, soybean, groundnut, rapeseed, thistle, sunflower, olive, sesame, corn, castor, and babassu). The influence of the oils on the settling behavior of *Triatoma infestans* nymphs and the activity of an oil-water formulation of the fungus against this vector under lab. and simulated field conditions were also detd. With exception of DOS 75 and Surfax 220 germination of conidia on complete medium was >98% at 24 h after exposure to surfactants up to 10%. Elevated rates of germination (>25%) were obsd. in 10% corn, thistle and linseed oil 8 days after **incubation**. Pure oils had a significant repellent effect to *T. infestans*. Repellency decreased generally at 10% of the oil and some oils showed some attractiveness for nymphs when tested at 1%. Nymphs were highly susceptible to oil-water formulated conidia, even at unfavorable moisture for extra-tegumental development of the fungus on the insect cuticle.

Supplementary Terms: *Beauveria bassiana* conidia; settling behavior surfactant vegetable oil nymph repellency; *Triatoma infestans*

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Section cross-reference(s): 5, 12

Indexing

Index Terms:

1338-43-8, Span 80

151-21-3, Surfax 220

9005-65-6, Tween 80

9016-45-9, Renex 95

Biological Study (BIOL) Biological Study, Unclassified (BSU)

B. bassiana conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of T. infestans and its N3 was susceptible to oil-water formulated conidia

25154-52-3, Nonyl phenol

Biological Study (BIOL) Biological Study, Unclassified (BSU)

B. bassiana conidia germination was >98 percent after 24 h exposure to Renex 60 surfactant and pure oil had repellency on settling behavior of T. infestans and its N3 was susceptible to oil-water formulated conidia

9005-64-5, Tween 20

Biological Study (BIOL) Biological Study, Unclassified (BSU)

B. bassiana conidial germination was raised by Tween 20 and pure oil had repellent effect on settling behavior of T. infestans and its N3 were susceptible to oil-water formulated conidia even at unfavorable moisture

Arachis hypogaea

Asteraceae

Beauveria bassiana

Brassica campestris

Brassicaceae

Carduus

Flax

Glycine max

Helianthus annuus

Insect repellents

Linaceae

Linum usitatissimum

Olea europaea

Pedaliaceae

Reduviidae

Sesame

Sesamum indicum

Surfactants

Triatoma

Triatoma infestans

B. bassiana conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of T. infestans and its N3 was susceptible to oil-water formulated conidia

Castor oil

Biological Study (BIOL) Biological Study, Unclassified (BSU)

B. bassiana conidia germination was highly induced by corn, soybean, thistle than castor oil and pure oil had repellency on settling behavior of T. infestans and its N3 was susceptible to oil-water formulated conidia

Corn oil

Linseed oil

Olive oil

Peanut oil

Rape oil

Soybean oil

Sunflower oil

Biological Study (BIOL) Biological Study, Unclassified (BSU)

B. bassiana conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Euphorbiaceae

Ricinus communis

B. bassiana conidia germination was highly induced by corn, soybean, thistle than castor oil and pure oil had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Fabaceae

papilionoid; *B. bassiana* conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Fats and Glyceridic oils

Biological Study (BIOL) Biological Study, Unclassified (BSU)

babassu; *B. bassiana* conidia germination was highly induced by corn, soybean, thistle than babassu oil and pure oil had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Fats and Glyceridic oils

Biological Study (BIOL) Biological Study, Unclassified (BSU)

sesame; *B. bassiana* conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Fungi

entomopathogenic; *B. bassiana* conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Poaceae

Zea mays

B. bassiana conidia germination was highly induced by corn oil and pure oil had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Spore

conidiospore; *B. bassiana* conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Surfactants

anionic; DOS 75; *B. bassiana* conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of *T. infestans* and its N3 was susceptible to oil-water formulated conidia

Surfactants

nonionic; MP 600; *B. bassiana* conidia germination raised after 24 h exposure to surfactants and 8 days **incubation** in various vegetable oils had repellency on settling behavior of *T. infestans* and its N3 was

susceptible to oil-water formulated conidia

Dates

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Bibliographic Update: 15 Sep 2005

Indexing Update: 14 Dec 2018

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32. Continuous production of extracellular L-glutaminase by ca-alginate-immobilized marine *Beauveria bassiana* BTMF S-10 in packed-bed reactor

Author: Sabu, Abdulhameed; Kumar, Sukumaran Rajeev; Chandrasekaran, Muthusamy
Corporate Source: Regional Research Laboratory (CSIR) Biotechnology Division Trivandrum 695 019, India (IN)
Source: Applied Biochemistry and Biotechnology (**20021231**), 102-103 pp. 71-79 *In English*
CODEN: ABIBDL
ISSN: 0273-2289
DOI: 10.1385/abab:102-103:1-6:071
Publisher: Humana Press Inc., Totowa, New Jersey (NJ), United States (US)
Document Type: Journal
Document ID: 2002:785369 (DN 138:23732)

Abstract

L-Glutamine amidohydrolase (L-glutaminase, EC 3.5.1.2) is a therapeutically and industrially important enzyme. Because it is a potent antileukemic agent and a flavor-enhancing agent used in the food industry, many researchers have focused their attention on L-glutaminase. In this article, we report the continuous prodn. of extracellular L-glutaminase by the marine fungus *Beauveria bassiana* BTMFS-10 in a packed-bed reactor. Parameters influencing bead prodn. and performance under batch mode were optimized in the order-support (Na-alginate) concn., concn. of CaCl₂ for bead prepn., curing time of beads, spore inoculum concn., activation time, initial pH of enzyme prodn. medium, temp. of **incubation**, and retention time. Parameters optimized under batch mode for L-glutaminase prodn. were incorporated into the continuous prodn. studies. Beads with 12×10^8 spores/g of beads were activated in a soln. of 1% glutamine in seawater for 15 h, and the activated beads were packed into a packed-bed reactor. Enzyme prodn. medium (pH 9.0) was pumped through the bed, and the effluent was collected from the top of the column. The effect of flow rate of the medium, substrate concn., aeration, and bed height on continuous prodn. of L-glutaminase was studied. Prodn. was monitored for 5 h in each case, and the volumetric productivity was calcd. Under the optimized conditions for continuous prodn., the reactor gave a volumetric productivity of 4.048 U/(mL·h), which indicates that continuous prodn. of the enzyme by Ca-alginate-immobilized *S. bassiana* is well suited for *B. bassiana* and results

in a higher yield of enzyme within a shorter time. The results indicate the scope of utilizing immobilized *B. bassiana* for continuous com. prodn. of L-glutaminase.

Supplementary Terms: *Beauveria* glutaminase continuous fermn alginate immobilization

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:

56-86-0, L-Glutamic acid

Biochemical Process (BCP) Biological Study (BIOL) Process (PROC)

continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana**
BTMF S-10 in packed-bed reactor

9001-47-2P, Glutaminase

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP)

continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana**
BTMF S-10 in packed-bed reactor

9005-35-0, Calcium alginate

Biological Study (BIOL) Biological Use, Unclassified (BUU) Uses (USES)

continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana**
BTMF S-10 in packed-bed reactor

10043-52-4, Calcium chloride

Physical, Engineering or Chemical Process (PEP) Process (PROC)

continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana**
BTMF S-10 in packed-bed reactor

Beauveria bassiana

Residence time

Temperature effects, biological

continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana**
BTMF S-10 in packed-bed reactor

Fermentation

continuous; continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana** BTMF S-10 in packed-bed reactor

Fermentation apparatus

packed-bed fermentor; continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana** BTMF S-10 in packed-bed reactor

Immobilization, molecular or cellular

microbial cell; continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana** BTMF S-10 in packed-bed reactor

pH

biol. effects of; continuous prodn. of extracellular L-glutaminase by ca-alginate-immobilized marine **Beauveria bassiana** BTMF S-10 in packed-bed reactor

Dates

Entered STN: 15 Oct 2002
Last Update: 09 Jan 2003
Bibliographic Update: 15 Oct 2002
Indexing Update: 09 Jan 2003

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33. Effect of chemical products used in lettuce and chrysanthemum on entomopathogenic fungi

Author: Loureiro, Elisangela de S.; Moino, Alcides Jr.; Arnosti, Andre; de Souza, Giselle C.
Corporate Source: Centro Experimental do Inst. Biologico Lab. Controle Biologico Campinas 13001-970, Brazil (BR)
Source: Neotropical Entomology (**20020630**), 31(2), pp. 263-269 *In Portuguese*
CODEN: NEENDV
ISSN: 1519-566X
Publisher: Entomological Society of Brazil, Londrina, Brazil (BR)
Document Type: Journal
Document ID: 2002:660821 (DN 137:290289)

Abstract

The effect of eight fungicides and twelve insecticides used in lettuce and chrysanthemum crops, was evaluated on the fungi **Beauveria bassiana** (Bals.) Vuill., *Metarhizium anisopliae* (Metsch.) Sorok., *Paecilomyces fumosoroseus* (Wise) (Holm ex SF Gray) and *Verticillium lecanii* (Zimmerman) through in vitro tests. The products were added to petri dishes contg. culture medium (PDA), according to the concns. recommended for application in field. After the inoculation of the fungi, the plates were incubate at 25±1°C, 12h photophase and 70±10% relative humidity. The mean diam. of colonies and the no. of conidia produced after a variable period of **incubation** for each studied fungus were evaluated. The insecticides thiametoxan and imidacloprid were compatible with all the fungi studied. On the other hand, cuprous oxide, iprodione, methyl parathion, tebuconazole, metalaxil, mancozeb, folpet, fenpropathrin and tetraconazol inhibited the growth of the fungi, being classified as toxicant or very toxicant products to the entomopathogens.

Supplementary Terms: fungicide insecticide lettuce chrysanthemum toxicity entomopathogenic fungus

Classification Codes

CA Section Code: Agrochemical Bioregulators (5)

Section cross-reference(s): 4**Indexing****Index Terms:**

107534-96-3, Tebuconazole

112281-77-3, Tetraconazole

1317-39-1, Cuprous oxide

133-07-3, Folpet

138261-41-3, Imidacloprid

15263-53-3, Cartap

153719-23-4, Thiamethoxam

22259-30-9, Formetanate

23564-05-8, Thiophanate-methyl

298-00-0, Parathion-methyl

30560-19-1, Acephate

36734-19-7, Iprodione

39515-41-8, Fenpropathrin

57837-19-1, Metalaxyl

66215-27-8, Cyromazine

71751-41-2, Abamectin

8018-01-7, Mancozeb

82657-04-3, Bifenthrin

Adverse Effect, Including Toxicity (ADV) Agricultural Use (AGR) Biological Study (BIOL) Biological Study,

Unclassified (BSU) Uses (USES)

effect on entomopathogenic fungi

Beauveria bassiana

Metarhizium anisopliae

Paecilomyces fumoso-roseus

Verticillium lecanii

effect of fungicides and insecticides used in lettuce and chrysanthemum on

Chrysanthemum

Lactuca sativa

effect on entomopathogenic fungi of fungicides and insecticides used in

Fungi

entomopathogenic; effect of fungicides and insecticides used in lettuce and chrysanthemum on

Fungicides

Insecticides

Pesticides

effect of fungicides and insecticides used in lettuce and chrysanthemum on entomopathogenic fungi

Dates**Entered STN:** 03 Sep 2002**Last Update:** 07 Nov 2002

Bibliographic Update: 03 Sep 2002

Indexing Update: 07 Nov 2002

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34. Enzymic activity of *Beauveria bassiana* and *Metarhizium anisopliae* lipases and proteases and their relation to the pathogenicity to the coffee berry borer *Hypothenemus hampei* (Coleoptera: Scolytidae)

Author: Giraldo-Cardozo, Elsa Maria; Lopez-F., Yamel; Delgado-B., Fernando; Velez-A., Patricia E.

Corporate Source: Bacteriologa, Convenio COLCIENCIAS-FEDERACAFE

Source: Revista Colombiana de Entomologia (**20010630**), 27(1-2), pp. 61-65 *In Spanish*
CODEN: RCENDR
ISSN: 0120-0488

Publisher: Sociedad Colombiana de Entomologia, Bogota, Colombia (CO)

Document Type: Journal

Document ID: 2001:565804 (DN 135:239531)

Abstract

The use of entomopathogenic fungi like *B. bassiana* and *M. anisopliae* have shown a great potential as a control method of several insects like the coffee berry borer (*H. hampei*). A close relationship between the activity of some enzymes that attack the cuticle structural components and the infection process of the fungi over the insect has been found. At 1st stage, the growing rate, culture medium pH changes, pathogenicity and enzymic activity (total proteases and lipases) in Bb 9620 (monosporic) and Bb 9205 (multisporic) of *B. bassiana* isolations and Ma 9303 (monosporic) and Ma 9236 (multisporic) of *M. anisopliae* isolations were quantified. At 2nd stage 9 isolations of *B. bassiana* and 5 of *M. anisopliae* with different pathogenicity levels over *H. hampei* were studied. Enzymic activity were measured by spectrophotometry using extinction coeffs. of $\epsilon_{340}=98 \text{ M}^{-1}\text{cm}^{-1}$ for the azo group released by the proteases and $\epsilon_{400}=18.77 \text{ M}^{-1}\text{cm}^{-1}$ for the p-nitrophenol released by lipases. The total proteases show max. activity peaks at 5-7 days of **incubation**. The *M. anisopliae* proteolytic activity is significative higher than *B. bassiana* activity. The total lipases showed max. activity at 3-5 days of **incubation**, but there is not significative difference among isolates. The results point out that both lipases and proteases play an important role at the initial infection mechanism of fungi over the *H. hampei* cuticle.

Supplementary Terms: fungus infection coffee berry borer infection

Classification Codes

CA Section Code: Nonmammalian Biochemistry (12)

Section cross-reference(s): 5

Indexing

Index Terms:

9001-62-1, Lipase

9001-92-7, Protease

Biological Activity or Effector, Except Adverse (BAC) Biological Study (BIOL) Biological Study, Unclassified (BSU)

fungus lipase and protease in relation to pathogenicity to coffee berry borer

Beauveria bassiana

Metarhizium anisopliae

Stephanoderes hampei

fungus lipase and protease in relation to pathogenicity to coffee berry borer

Invertebrate body covering

cuticle; fungus lipase and protease in relation to pathogenicity to coffee berry borer

Dates

Entered STN: 05 Aug 2001

Last Update: 04 Sep 2015

Bibliographic Update: 05 Aug 2001

Indexing Update: 04 Sep 2015

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35. Condition of mass production of **Beauveria bassiana** kcs-1 isolate against *Plutella xylostella*

Author: Nong, Xiangqun; Kim, Jeongjun; Deng, Chunsheng

Corporate Source: Institute of Biological Control, Chinese Academy of Agricultural Sciences

Source: Zhongguo Bingduxue (**2000**), 15(Suppl.), pp. 130-133 *In Chinese*
CODEN: ZBINER

ISSN: 1003-5125

Publisher: Kexue Chubanshe, Beijing, China (CN)

Document Type: Journal

Document ID: 2001:554037 (DN 136:117417)

Abstract

Vital factors for mass prodn. of **Beauveria bassiana** kcs-1 isolate, which is highly virulent to *Plutella xylostella*, were studied. Corn flour and peptone were most suitable for liq. fermn. among 5 carbon and 5 nitrogen resource studied. For sporulation in solid phase, superior combination of the carrier and nutrient as medium was sawdust added corn flour and wheat bran or rice shell added wheat bran. The appropriate

moisture of the medium after inoculating was 60%.The fungus grew fast and the highest yield of the sporulation was 43.8×10^8 spores per g dried culture at 30°C **incubation**.

Supplementary Terms: Beauveria mass prodn; fermn Beauveria

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:

Beauveria bassiana

Carbon sources, microbial

Culture media

Fermentation

Nitrogen sources, microbial

Plutella xylostella

Sawdust

Sporulation

Wheat bran

conditions for mass prodn. of **Beauveria bassiana** kcs-1 isolate against Plutella xylostella

Flours and Meals

corn; conditions for mass prodn. of **Beauveria bassiana** kcs-1 isolate against Plutella xylostella

Oryza sativa

shell; conditions for mass prodn. of **Beauveria bassiana** kcs-1 isolate against Plutella xylostella

Peptones

Biological Study (BIOL) Biological Study, Unclassified (BSU)

conditions for mass prodn. of **Beauveria bassiana** kcs-1 isolate against Plutella xylostella

Zea mays

flour and meal; conditions for mass prodn. of **Beauveria bassiana** kcs-1 isolate against Plutella xylostella

Dates

Entered STN: 01 Aug 2001

Last Update: 14 Feb 2002

Bibliographic Update: 01 Aug 2001

Indexing Update: 14 Feb 2002

36. Characterization and Carbon Metabolism in Fungi Pathogenic to *Triatoma infestans*, a Chagas Disease Vector

Author: Juarez, M. Patricia; Crespo, Rosana; Fernandez, Gustavo Calderon; Lecuona, Roberto; Cafferata, Lazaro F. R.
Corporate Source: UNLP, Instituto de Investigaciones Bioquimicas de La Plata Facultad de Ciencias Medicas La Plata 1900, Argentina (AR)
Source: Journal of Invertebrate Pathology (**20001031**), 76(3), pp. 198-207 *In English*
CODEN: JIVPAZ
ISSN: 0022-2011
DOI: 10.1006/jipa.2000.4964
Publisher: Academic Press, Orlando, Florida (FL), United States (US)
Document Type: Journal
Document ID: 2000:711950 (DN 134:128328)

Abstract

The pathogenicity of *Metarhizium anisopliae* (Ma) and **Beauveria bassiana** (Bb) isolates against *Triatoma infestans*, the major vector of Chagas disease in Argentina is reported. A 100% mortality was achieved with mean lethal times varying from 5.8 (Ma6) to 7.7 (Bb5) or 11.1 days (Bb10). The fatty acid, hydrocarbon, and total lipid patterns were compared for glucose-grown and alkane-grown Bb10 cultures. The alkane-grown cells showed a lipid pattern different from that of glucose-grown cells, with triacylglycerol as the major lipid fraction, whereas sterols prevailed in the glucose-grown cells. A significant redn. in the relative amts. of linoleic acid diminished the unsatd./satd. fatty acid ratio for alkane-grown cells; in addn., large amts. of heptacosanoic and eicosanoic acids were detected in the satd. fraction. The hydrocarbon profile of Bb10 showed a satd. chain length distribution, with a marked prevalence for straight chains, ranging from n-C18 to n-C37 in the carbon skeleton, with n-C22 as the major component. Alkane-grown cells showed no qual. changes in their hydrocarbon fraction, but a similar ratio for odd/even carbon chains. After 48-h **incubation** assays, [1-¹⁴C]acetate uptake was largely diminished following a period of alkane growth induction. Glucose-grown cells readily incorporated 19% of the label into phospholipids, hydrocarbons, triacylglycerols, and free fatty acids. In contrast, incorporation was reduced to 5.3% for alkane-grown cells, accounting only for phospholipid synthesis. (c) 2000 Academic Press.

Supplementary Terms: Beauveria carbon metab fatty acid; Metarhizium carbon metab fatty acid

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

112-95-8, Eicosane
132828-64-9
13287-25-7

14167-59-0, Tetratriacontane
14167-67-0, 3-Methyl nonacosane
149037-44-5
1560-75-4, 2-Methyl nonacosane
226578-61-6
26741-18-4
321919-08-8
321919-09-9
321919-10-2
506-30-9, Eicosanoic acid
544-85-4, Dotriacontane
593-49-7, Heptacosane
60-33-3, 9,12-Octadecadienoic acid (9Z,12Z)-
629-94-7, Heneicosane
629-97-0, Docosane
629-99-2, Pentacosane
630-01-3, Hexacosane
630-02-4, Octacosane
630-03-5, Nonacosane
630-04-6, Hentriacontane
630-05-7, Tritriacontane
630-06-8, Hexatriacontane
630-07-9, Pentatriacontane
638-67-5, Tricosane
638-68-6, n-Triacontane
646-31-1, Tetracosane
65820-46-4, 11-Methyl docosane
69198-91-0
69526-87-0, 9-Methyl tricosane
7138-40-1, Heptacosanoic acid
7194-84-5, Heptatriacontane
7194-85-6, Octatriacontane
73189-31-8, 4-Methyloctacosane
88942-95-4, 5,15-Dimethyl hentriacontane
Biological Study (BIOL) Biological Study, Unclassified (BSU)
carbon metab. in fungi pathogenic to *Triatoma infestans*

Alkanes

Fatty acids

Glycerides

Lipids

Sterols

Biological Study (BIOL) Biological Study, Unclassified (BSU)
carbon metab. in fungi pathogenic to *Triatoma infestans*

Beauveria bassiana

Metarhizium anisopliae

Triatoma infestans

carbon metab. in fungi pathogenic to *Triatoma infestans*

Invertebrate body covering
cuticle; carbon metab. in fungi pathogenic to *Triatoma infestans*

Dates

Entered STN: 10 Oct 2000
Last Update: 02 Sep 2015
Bibliographic Update: 10 Oct 2000
Indexing Update: 02 Sep 2015

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37. Biotransformation of cadinane sesquiterpenes by *Beauveria bassiana* ATCC 7159

Author: Buchanan, Greg O.; Williams, Lawrence A. D.; Reese, Paul B.
Corporate Source: University of the West Indies Department of Chemistry Kingston 7, Jamaica (JM)
Source: Phytochemistry (**20000512**), 54(1), pp. 39-49 *In English*
CODEN: PYTCAS
ISSN: 0031-9422
DOI: 10.1016/s0031-9422(00)00024-8
Publisher: Elsevier Science Ltd., Oxford, United Kingdom (GB)
Document Type: Journal
Document ID: 2000:379844 (DN 133:100896)

Abstract

Incubation of cadina-4,10(15)-dien-3-one with *Beauveria bassiana* ATCC 7159 resulted in the prodn. of 9 novel sesquiterpenes. These metabolites were identified as (4S)-cadin-10(15)-en-3-one, (4S)-3 α -hydroxycadin-10(15)-ene, (4R)-3 α -hydroxycadin-10(15)-ene, (4S)-3 β -hydroxycadin-10(15)-ene, (4S)-3 β -hydroxycadina-10(15),12(14)-diene, (4S)-13-hydroxycadin-10(15)-en-3-one, (4S)-12-hydroxycadin-10(15)-en-3-one, (4R)-3 β ,14-dihydroxycadin-10(15)-ene and 3 α -hydroxycadina-4,10(15)-diene. The allylic alc. 3 α -hydroxycadina-4,10(15)-diene was also biotransformed to afford cadina-4,10(15)-dien-3-one, (4S)-cadin-10(15)-en-3-one and (4S)-12-hydroxycadin-10(15)-en-3-one. The insecticidal potential and phytotoxicity of the isolated metabolites have been evaluated. The prepn. of 3 α -hydroxycadina-4,10(15)-diene from cadina-4,10(15)-dien-3-one, is given.

Supplementary Terms: cadinane sesquiterpenes biotransformation *Beauveria* insecticide

Classification Codes

CA Section Code: Agrochemical Bioregulators (5)
Section cross-reference(s): 27

Indexing

Index Terms:

131417-74-8

Agricultural Use (AGR) Biological Study (BIOL) Biological Study, Unclassified (BSU) Uses (USES)
biotransformation by **Beauveria bassiana** ATCC 7159

283172-00-9

283172-02-1

283172-04-3

283172-05-4

283172-06-5

283172-08-7

283172-10-1

283172-12-3

Agricultural Use (AGR) Biological Study (BIOL) Biological Study, Unclassified (BSU) Uses (USES)
insecticidal biotransformation product of cadina-4,10(15)-dien-3-one by **Beauveria bassiana** ATCC 7159

283171-98-2P

Agricultural Use (AGR) Biological Study (BIOL) Biological Study, Unclassified (BSU) Preparation (PREP)
Synthetic Preparation (SPN) Uses (USES)
prepn. and biotransformation by **Beauveria bassiana** ATCC 7159

Beauveria bassiana

Insecticides

insecticidal biotransformation product of cadina-4,10(15)-dien-3-one by **Beauveria bassiana** ATCC 7159

Dates

Entered STN: 08 Jun 2000

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Bibliographic Update: 08 Jun 2000

Indexing Update: 18 Aug 2015

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38. Microcycle conidiation in the entomopathogenic fungus **Beauveria bassiana** Bals. (Vuill.)

Author: Bosch, Alejandra; Yantorno, Osvaldo

Corporate Source: Centro de Investigacion y Desarrollo en Fermentaciones Industriales (CINDEFI), Consejo Nacional de Investigaciones Cientificas y Tecnicas (CONICET), Facultad de Ciencias Exactas, Universidad Nacional de La Plata Centro de Investigacion y Desarrollo en Fermentaciones Industriales (CINDEFI), Consejo Nacional de Investigaciones Cientificas y Tecnicas (CONICET), Facultad de Ciencias Exactas La Plata 115 1900, Argentina (AR)

Source: Process Biochemistry (Oxford) (**19990930**), 34(6,7), pp. 707-716 *In English*
CODEN: PBCHE5
ISSN: 1359-5113

DOI: 10.1016/s0032-9592(98)00145-9

Publisher: Elsevier Science Ireland Ltd., Shannon, Ireland (IE)

Document Type: Journal

Document ID: 1999:644290 (DN 131:348923)

Abstract

The present work documents the exptl. conditions under which the three types of two local strains of **Beauveria bassiana** conidia enter into a microcycle conidiation process (conidiation without vegetative phase). Different levels of different C (glucose and starch) and N sources (KNO₃, NH₄Cl, glutamate and peptone) were added to a basal medium contg. buffer phosphate and microelements. No microcycle conidiation was obsd. in media contg. more than 0.00139 g N L⁻¹ for every N source and all C source concns. assayed (except when C level was 0 g L⁻¹). The absence of the C source, at every level of the N source, produced daughter conidia at the tip of very short germ tubes. The percentage of germinating conidia which underwent microcycle conidiation in 48 h of **incubation** was not modified by the C source level. Nevertheless, the higher the concn. of the C source added, the longer and the stronger the vacuolated germinating tubes produced. The secondary conidia produced by microcycle conidiation were viable and capable of repeating the cycle for at least two generations. Finally, taking into account the morphol. changes during microcycle conidiation three distinct phases which characterized the process were established. The development of reproducible exptl. systems where microcycle conidiation can be expressed is important in a complete study of *B. bassiana* conidiogenesis.

Supplementary Terms: nutrition sporulation Beauveria

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

Beauveria bassiana

Carbon sources, microbial

Nitrogen sources, microbial

Nutrition, microbial

Sporulation

nutrition effect on conidiation in **Beauveria bassiana**

Dates

Entered STN: 11 Oct 1999

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Bibliographic Update: 11 Oct 1999

Indexing Update: 17 Dec 1999

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39. Utilization of prawn waste for chitinase production by the marine fungus **Beauveria bassiana** by solid state fermentation

Author: Suresh, P. V.; Chandrasekaran, M.
Corporate Source: Cochin University of Science and Technology Microbial Technology Unit, Department of Biotechnology Kochi 682 022, India (IN)
Source: World Journal of Microbiology & Biotechnology (**19981031**), 14(5), pp. 655-660 *In English*
CODEN: WJMBEY
ISSN: 0959-3993
Publisher: Rapid Science Publishers, London, United Kingdom (GB)
Document Type: Journal
Document ID: 1999:60828 (DN 130:222183)

Abstract

Prawn waste, a chitinous solid waste of the shellfish processing industry, was used as a substrate for chitinase prodn. by the marine fungus **Beauveria bassiana** BTMF S10, in a solid state fermn. (SSF) culture. The process parameters influencing SSF were optimized. A max. chitinase yield of 248.0 units/g initial dry substrate (U/gIDS) was obtained in a medium contg. a 5:1 ratio (w/v) of prawn waste/sea water, 1% (wt./wt.) NaCl, 2.5% (wt./wt.) KH₂PO₄, 425-600 µm substrate particle size at 27°C, initial pH 9.5, and after 5 days of **incubation**. The presence of yeast ext. reduced chitinase yield. The results indicate scope for the utilization of shellfish processing (prawn) waste for the industrial prodn. of chitinase by using solid state fermn.

Supplementary Terms: Beauveria chitinase fermn prawn waste

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:

9001-06-3P, Chitinase

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP)

utilization of prawn waste for chitinase prodn. by marine fungus **Beauveria bassiana** by solid state fermn.

Beauveria bassiana

Fermentation

Prawn

Solid wastes

utilization of prawn waste for chitinase prodn. by marine fungus **Beauveria bassiana** by solid state fermn.

Fermentation

solid-state; utilization of prawn waste for chitinase prodn. by marine fungus **Beauveria bassiana** by solid state fermn.

Dates

Entered STN: 29 Jan 1999

Last Update: 17 Apr 1999

Bibliographic Update: 29 Jan 1999

Indexing Update: 17 Apr 1999

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40. Microbial biotransformations of a synthetic immunomodulating agent, HR325

Author: Lacroix, Isabelle; Biton, Jacques; Azerad, Robert
Corporate Source: Univ. Rene Descartes-Paris V Lab. Chim. Biochim. Pharm. Toxicol. Paris 75270, France (FR)
Source: Bioorganic & Medicinal Chemistry (**19970731**), 5(7), pp. 1369-1380 *In English*
CODEN: BMECEP
ISSN: 0968-0896
DOI: 10.1016/s0968-0896(97)00094-1
Publisher: Elsevier, Oxford, United Kingdom (GB)
Document Type: Journal
Document ID: 1997:538156 (DN 127:245289)

Abstract

The microbial biotransformation of HR325 [2-cyano-3-cyclopropyl-3-hydroxy-N-(4'-trifluoromethyl-3'-methylphenyl)propenamide], a synthetic immunomodulating agent, was investigated in order to be compared with animal metab. and to prep. some metabolites which are difficult to obtain by chem. methods. Several fungal strains are able to completely metabolize this drug. *Mortierella isabellina* NRRL 1757 achieves only a benzylic hydroxylation on the arom. Me group, affording in high yield the corresponding hydroxymethyl deriv. Other strains, such as *Cunninghamella elegans* ATCC 26269 or **Beauveria bassiana** ATCC 7159 can cleave both cyclopropyl and cyano groups in a new unknown oxidative biochem. reaction, which can be mimicked by m-chloroperbenzoate oxidn. The resulting cyanohydrin is hydrolyzed and reduced to a primary alc. In *B. bassiana*, the final **incubation** product is a β -4-O-methylglucoside deriv. of this alc., and has been fully characterized by independent synthesis. The different metab. patterns of HR325 in the 3 fungal strains are discussed, and a mechanistic hypothesis about the oxidative cleavage of the right part of the mol. is

proposed. The prodn. of microbial metabolites is compared to animal metab. in terms of structure and efficiency.

Supplementary Terms: HR325 metab Cunninghamella Beauveria Mortierella

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

106877-31-0, 4-Trifluoromethyl-3-toluidine
Reactant (RCT) Reactant or Reagent (RACT)
acetylation of

145852-77-3P
Preparation (PREP) Reactant (RCT) Reactant or Reagent (RACT) Synthetic Preparation (SPN)
dimethyldioxirane reaction with

145852-76-2P, 1,5-Anhydro-3,6-di-O-benzyl-2-deoxy-D-arabinohex-1-enopyranose
Preparation (PREP) Reactant (RCT) Reactant or Reagent (RACT) Synthetic Preparation (SPN)
methylation of

195723-99-0P
195724-00-6P
Biological Study (BIOL) Biological Study, Unclassified (BSU) Preparation (PREP) Properties (PRP) Purification or Recovery (PUR) Synthetic Preparation (SPN)
microbial biotransformations of a synthetic immunomodulating agent, HR325

171197-16-3, HR 325
Biological Study (BIOL) Biological Study, Unclassified (BSU) Reactant (RCT) Reactant or Reagent (RACT)
microbial biotransformations of a synthetic immunomodulating agent, HR325

195723-98-9
195826-56-3, RU 34941
Biological Study (BIOL) Biological Study, Unclassified (BSU)
microbial biotransformations of a synthetic immunomodulating agent, HR325

195724-01-7P
195724-02-8P
195724-03-9P
195724-06-2P
Preparation (PREP) Properties (PRP) Purification or Recovery (PUR) Reactant (RCT) Reactant or Reagent (RACT) Synthetic Preparation (SPN)
microbial biotransformations of a synthetic immunomodulating agent, HR325

195724-04-0P
195724-05-1P
Preparation (PREP) Properties (PRP) Purification or Recovery (PUR) Synthetic Preparation (SPN)
microbial biotransformations of a synthetic immunomodulating agent, HR325

1100049-57-7P

Preparation (PREP) Synthetic Preparation (SPN)

microbial biotransformations of a synthetic immunomodulating agent, HR325

50-99-7

Reactant (RCT) Reactant or Reagent (RACT) Reagent (RGT)

microbial biotransformations of a synthetic immunomodulating agent, HR325

108-24-7

13265-84-4

Reactant (RCT) Reactant or Reagent (RACT)

microbial biotransformations of a synthetic immunomodulating agent, HR325

145852-85-3P

Preparation (PREP) Reactant (RCT) Reactant or Reagent (RACT) Synthetic Preparation (SPN)

Microbial biotransformations of a synthetic immunomodulating agent, HR325

13831-31-7, Acetoxyacetyl chloride

Reactant (RCT) Reactant or Reagent (RACT)

trifluoromethethyltoluidine reaction with

Dates

Entered STN: 23 Aug 1997

Last Update: 23 Oct 2017

Bibliographic Update: 23 Aug 1997

Indexing Update: 23 Oct 2017

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41. On the stereochemistry of the Baeyer-Villiger degradation of arylalkyl ketones structurally related to raspberry ketone by **Beauveria bassiana**

Author: Donzelli, Fabio; Fuganti, Claudio; Mendoza, Monica; Pedrocchi-Fantoni, Giuseppe; Servi, Stefano; Zucchi, Gioia

Corporate Source: Cent. CNR Chim. Sostanze Org. Nat. Dip. Chim. Politecnico Milan 20131, Italy (IT)

Source: Tetrahedron: Asymmetry (**19961108**), 7(11), pp. 3129-3134 *In English*
CODEN: TASYE3
ISSN: 0957-4166

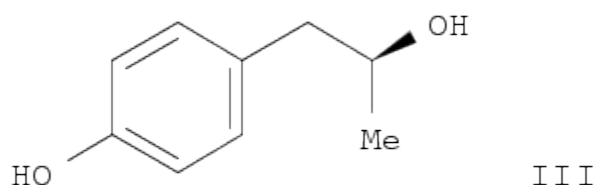
DOI: 10.1016/0957-4166(96)00413-2

Publisher: Elsevier, Oxford, United Kingdom (GB)

Document Type: Journal

Document ID: 1996:734596 (DN 126:44756)

Abstract



The mode of transformation in *B. bassiana* (ATCC 7159) of α -substituted 4-(4-hydroxyphenyl)butan-2-one was studied and compared with that of 4-OHC₆H₄CH=CHAc (I), which through raspberry ketone 4-OHC₆H₄CH₂CH₂Ac gives rise to tyrosol 4-OHC₆H₄CH₂CH₂OH. Of the fed materials, only product 4-OHC₆H₄CH₂CH(Me)COMe (II) behaves as I, i.e., is a good substrate for a formal Baeyer-Villiger chain-shortening transformation, which provides the secondary carbinol (III) enriched in the (S)-enantiomer. Stereochem. anal. of the products obtained in the **incubation** of an authentic sample of (S)-II, obtained with bakers' yeast upon redn. of the corresponding unsatd. ketone, indicates that the Baeyer-Villiger degrdn. leading to III occurs with kinetic preference for the (S)-enantiomer and retention of configuration at the migrating C atom.

Supplementary Terms: Baeyer Villiger degrdn arylalkyl ketone Beauveria

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

131029-01-1P

1517-68-6P

184778-51-6P

184778-52-7P

Preparation (PREP) Properties (PRP) Synthetic Preparation (SPN)
prepn. of

169477-92-3P, 2-Butanone, 4-(4-hydroxyphenyl)-3-methyl-, (S)-

Biological Study (BIOL) Biological Study, Unclassified (BSU) Biosynthetic Preparation (BPN) Preparation (PREP)
Properties (PRP) Synthetic Preparation (SPN)

stereochem. of the Baeyer-Villiger degrdn. of arylalkyl ketones structurally related to raspberry ketone by

Beauveria bassiana

122-84-9

184972-19-8

770-39-8

Biological Study (BIOL) Biological Study, Unclassified (BSU) Reactant (RCT) Reactant or Reagent (RACT)
stereochem. of the Baeyer-Villiger degrdn. of arylalkyl ketones structurally related to raspberry ketone by

Beauveria bassiana

5471-51-2D, Raspberry ketone, derivs.

92545-70-5

Biological Study (BIOL) Biological Study, Unclassified (BSU)

stereochem. of the Baeyer-Villiger degrdn. of arylalkyl ketones structurally related to raspberry ketone by

Beauveria bassiana

105-13-5P

623-05-2P

Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP)

stereochem. of the Baeyer-Villiger degrdn. of arylalkyl ketones structurally related to raspberry ketone by

Beauveria bassiana

184778-50-5P

184972-20-1P

Byproduct (BYP) Preparation (PREP)

stereochem. of the Baeyer-Villiger degrdn. of arylalkyl ketones structurally related to raspberry ketone by

Beauveria bassiana

Baeyer-Villiger oxidation

Beauveria bassiana

stereochem. of the Baeyer-Villiger degrdn. of arylalkyl ketones structurally related to raspberry ketone by

Beauveria bassiana

Ketones

Biological Study (BIOL) Biological Study, Unclassified (BSU)

alkyl arom.; stereochem. of the Baeyer-Villiger degrdn. of arylalkyl ketones structurally related to raspberry ketone by **Beauveria bassiana**

Dates

Entered STN:

14 Dec 1996

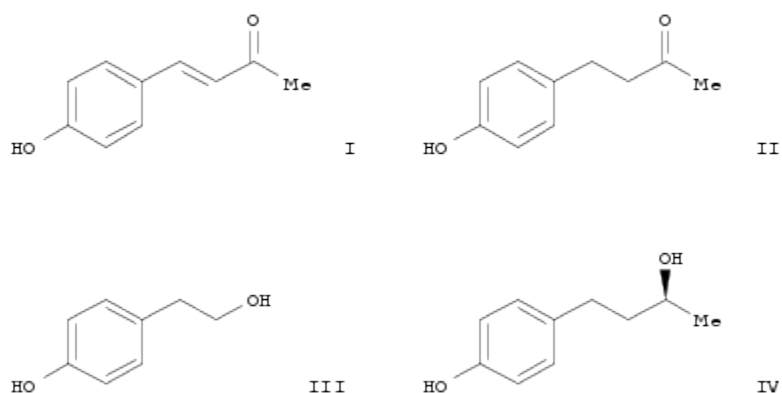
Last Update: 26 Aug 2015
Bibliographic Update: 14 Dec 1996
Indexing Update: 26 Aug 2015

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42. Biogenesis and biodegradation of raspberry ketone in the fungus **Beauveria bassiana**

Author: Fuganti, Claudio; Mendoza, Monica; Joulain, Daniel; Minut, Jose; Pedrocchi-Fantoni, Giuseppe; Piergianni, Valentino; Servi, Stefano; Zucchi, Gioia
Corporate Source: Politecnico Dipartimento Chimica Milan 20133, Italy (IT)
Source: Journal of Agricultural and Food Chemistry (**19961130**), 44(11), pp. 3616-3619 *In English*
CODEN: JAFCAU
ISSN: 0021-8561
DOI: 10.1021/jf9508054
Publisher: American Chemical Society, Washington, District of Columbia (DC), United States (US)
Document Type: Journal
Document ID: 1996:637003 (DN 125:270067)

Abstract



In growing cultures of *B. bassiana* (ATCC 7159) the **incubation** of 4-(4'-hydroxyphenyl)but-3-en-2-one (I), of 4-(4'-hydroxyphenyl)butan-2-one (raspberry ketone, II), and of the S and R,S forms of 4-(4'-hydroxyphenyl)butan-2-ol (III) yields 2-(4'-hydroxyphenyl)ethanol (tyrosol, IV) as a final product. The expts. support the view that the actual substrate for the Baeyer-Villiger-type degrdn. is II and that there is a kinetic preference in the microbial enzymic system for the oxidn. to II of the S form of III.

Supplementary Terms: raspberry ketone prodn biodegrdn *Beauveria*

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Section cross-reference(s): 17

Indexing

Index Terms:

59092-94-3P

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Biological Study, Unclassified (BSU) Biosynthetic Preparation (BPN) Preparation (PREP)

biogenesis and biodegrdn. of raspberry ketone in **Beauveria bassiana**

5471-51-2P, Raspberry ketone

Biological Study (BIOL) Biological Study, Unclassified (BSU) Biosynthetic Preparation (BPN) Preparation (PREP) Reactant (RCT) Reactant or Reagent (RACT)

biogenesis and biodegrdn. of raspberry ketone in **Beauveria bassiana**

69617-84-1P

Biological Study (BIOL) Biological Study, Unclassified (BSU) Biosynthetic Preparation (BPN) Preparation (PREP) Synthetic Preparation (SPN)

biogeneration and biodegrdn. of raspberry ketone in **Beauveria bassiana**

3160-35-8

Biological Study (BIOL) Biological Study, Unclassified (BSU) Reactant (RCT) Reactant or Reagent (RACT)

biogeneration and biodegrdn. of raspberry ketone in **Beauveria bassiana**

501-94-0P, Tyrosol

Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP) Reactant (RCT) Reactant or Reagent (RACT)

biogeneration and biodegrdn. of raspberry ketone in **Beauveria bassiana**

58556-55-1P

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP) enzymic prodn. of

182219-41-6P

182219-43-8P

Biological Study (BIOL) Biological Study, Unclassified (BSU) Preparation (PREP) Synthetic Preparation (SPN) prepn. and biotransformation with **Beauveria bassiana**

182219-44-9P

182219-45-0P

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP) prodn. by **Beauveria bassiana**

Beauveria bassiana

Fermentation

biogeneration and biodegrdn. of raspberry ketone in **Beauveria bassiana**

Oxidation

Baeyer-Villiger, enzymic, stereoselective; of raspberry ketone degrdn. in **Beauveria bassiana**

Dates

Entered STN: 30 Oct 1996

Last Update: 25 Aug 2015

Bibliographic Update: 30 Oct 1996

Indexing Update: 25 Aug 2015

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43. 4-Hydroxy-2-(N-indoliny)butane, a new metabolite of indoline in fungi

Author: Lacroix, Isabelle; Buisson, Didier; Philippe, Michel; Azerad, Robert
Corporate Source: Biochemie Pharmacologiques Toxicologiques Lab. Chemie Paris 75270, France (FR)
Source: Natural Product Letters (**19950831**), 7(1), pp. 15-22 *In English*
CODEN: NPLEEF
ISSN: 1057-5634
DOI: 10.1080/10575639508043181
Publisher: Harwood, Amsterdam, Netherlands (NL)
Document Type: Journal
Document ID: 1996:533240 (DN 125:190175)

Abstract

In addn. to N-acetylindoline and N-formylindoline, a new N-alkylated deriv. of indoline was isolated after **incubation** with a no. of fungal strains. Its structure was elucidated by spectral anal. and comparison with chem. synthesized racemic and optically active 4-hydroxy-2-(N-indoliny)butane.

Supplementary Terms: fungi hydroxyindolinybutane formation; indoline metabolite fungi

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

16078-30-1

180869-06-1

2861-59-8, N-Formylindoline

496-15-1, Indoline

77564-42-2

Biological Study (BIOL) Biological Study, Unclassified (BSU) Properties (PRP)

4-Hydroxy-2-(N-indoliny)butane, new metabolite of indoline in fungi

180869-07-2

180869-08-3

180869-09-4

84184-35-0

Properties (PRP)

4-Hydroxy-2-(N-indoliny)butane, new metabolite of indoline in fungi

Acremonium alternatum

Beauveria bassiana

Fungi

Fusarium roseum

Geotrichum candidum

Mucor griseocyanus

Mucor mucedo

4-Hydroxy-2-(N-indoliny)butane, new metabolite of indoline in fungi

Dates

Entered STN: 06 Sep 1996
Last Update: 25 Aug 2015
Bibliographic Update: 06 Sep 1996
Indexing Update: 25 Aug 2015

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44. Biodegradability of chitin- and chitosan-containing films in soil environment

Author: Makarios-Laham, Ibrahim; Lee, Tung-Ching
Corporate Source: Rutgers Univ. Dep. Food Sci. New Brunswick, New Jersey (NJ) 08903, United States (US)
Source: Journal of Environmental Polymer Degradation (**19950131**), 3(1), pp. 31-6 *In English*
CODEN: JEPDED
ISSN: 1064-7546
DOI: 10.1007/bf02067791
Publisher: Plenum, New York, New York (NY), United States (US)
Document Type: Journal
Document ID: 1995:569887 (DN 123:145378)

Abstract

The biodegrdn. of polyethylene-chitin (PE-chitin) and polyethylene-chitosan (PE-chitosan) films, contg. 10% by wt. chitin or chitosan, by pure microbial cultures and in a soil environment was studied. Three soil-inhabited organisms, *Serratia marcescens*, *Pseudomonas aeruginosa*, and ***Beauveria bassiana*** were able to utilize chitin and chitosan in prepd. PE-chitin and PE-chitosan films after eight wks. of **incubation** at 25° in a basal medium contg. no source of carbon or nitrogen. In a soil environment, the biodegrdn. of those films was studied and compared with a com. biodegradable film contg. 6% by the wt. of corn starch. In soil placed in the lab, 73.4% of the chitosan and 84.7% of the chitin in the films were degraded, while 46.5% of the starch in the com. film was degraded after six months of **incubation**. In an open field, 100% of the chitin and 100% of the chitosan in the films were degraded, but only 85% of the starch in the com. film was degraded after six months of **incubation**. The wt. of controls, (polyethylene films), remained mainly stable during the **incubation** period. Both PE-chitin and PE-chitosan films degraded at a higher rate than the com. starch-based film in a soil environment indicating the potential use of chitin-based films for the manufg. of biodegradable packaging materials.

Supplementary Terms: chitin chitosan polyethylene soil biodegradability

Classification Codes

CA Section Code: Plastics Manufacture And Processing (37)

Indexing

Index Terms:

1398-61-4, Chitin

9002-88-4, Polyethylene

9012-76-4, Chitosan

Polymer in Formulation (POF) Properties (PRP) Uses (USES)

biodegradability of chitin- and chitosan-contg. polyethylene films in soil

Beauveria bassiana

Pseudomonas aeruginosa

Serratia marcescens

Soils

biodegradability of chitin- and chitosan-contg. polyethylene films in soil

Polymer degradation

biochem.; biodegradability of chitin- and chitosan-contg. polyethylene films in soil

Dates

Entered STN: 24 May 1995

Last Update: 14 Sep 1995

Bibliographic Update: 24 May 1995

Indexing Update: 14 Sep 1995

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45. Protein hydrolysis in grasshopper cuticles by entomopathogenic fungal extracellular proteases

Author: Bidochka, Michael J.; Khachatourians, George G.

Corporate Source: Univ. Saskatchewan Dep. Appl. Microbiol. Food Sci. Saskatoon, Saskatchewan (SK) S7N 0W0, Canada (CA)

Source: Journal of Invertebrate Pathology (**19940131**), 63(1), pp. 7-13 *In English*
CODEN: JIVPAZ
ISSN: 0022-2011

DOI: 10.1006/jipa.1994.1002

Document Type: Journal

Document ID: 1994:240709 (DN 120:240709)

Abstract

Several regions of unsclerotized (teneral) cuticle from the migratory grasshopper, *Melanoplus sanguinipes*, were treated with extracellular protease-contg. culture supernatants of the entomopathogenic fungi, **Beauveria bassiana** or *Metarrhizium anisopliae*, or purified extracellular *B. bassiana* protease. Treatment of the various cuticles with the culture supernatants resulted in a 41.1% (forewing) to 83.0% (hindwing) loss in cuticle dry wt. Addn. of phenylmethylsulfonyl fluoride (PMSF), a protease inhibitor, to the culture supernatants, resulted in a substantial retention of cuticle dry wt. after the treatment. The urea-sol. proteins from untreated cuticles or cuticles treated with *B. bassiana* or *M. anisopliae* culture supernatants or purified *B. bassiana* protease were characterized by two-dimensional (2D) gel electrophoresis. An initial redn. in the no. of acidic proteins was obsd. in the 2D gels from cuticles previously treated with fungal culture supernatants or purified *B. bassiana* protease. High-mol.-wt. (>31 kDa) basic cuticular proteins were also susceptible to degrdn. by proteases. Addn. of PMSF to the *B. bassiana* or *M. anisopliae* supernatants previous to **incubation** with the cuticle resulted in only minor qual. changes in cuticular protein 2D patterns. The action of *B. bassiana* or *M. anisopliae* proteases toward acidic cuticular proteins, and to a lesser extent the high-mol. basic proteins, is discussed in light of what is known of the biochem. of entomopathogenic fungal proteases.

Supplementary Terms: grasshopper cuticle protein hydrolysis fungi

Classification Codes

CA Section Code: Nonmammalian Biochemistry (12)

Indexing

Index Terms:

9001-92-7, Protease

Biological Study (BIOL)

extracellular, of entomopathogenic fungi, grasshopper cuticle proteins hydrolysis by

Beauveria bassiana

Metarrhizium anisopliae

cuticular protein hydrolysis by extracellular proteases of, in grasshopper

Invertebrate body covering

cuticle; protein hydrolysis in, of grasshopper by entomopathogenic fungi

Melanoplus sanguinipes

protein hydrolysis in cuticle of, by entomopathogenic fungi extracellular proteases

Proteins

Reactant (RCT) Reactant or Reagent (RACT)

hydrolysis of, of grasshopper cuticle by entomopathogenic fungi extracellular proteases

Proteins, specific or class

Reactant (RCT) Reactant or Reagent (RACT)

cuticle-assocd.; hydrolysis of, of grasshopper by entomopathogenic fungi extracellular proteases

Dates

Entered STN: 14 May 1994
Last Update: 14 May 1994
Bibliographic Update: 14 May 1994
Indexing Update: 14 May 1994

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46. Agglutinin mediated opsonization of fungal blastospores in *Melanoplus differentialis* (Insecta)

Author: Wheeler, Margaret B.; Stuart, Gwendy S.; Hapner, Kenneth D.
Corporate Source: Montana State Univ. Dep. Chem. Biochem. Bozeman, Montana (MT) 59717, United States (US)
Source: Journal of Insect Physiology (**19930630**), 39(6), pp. 477-83 *In English*
CODEN: JIPHAF
ISSN: 0022-1910
DOI: 10.1016/0022-1910(93)90079-7
Document Type: Journal
Document ID: 1993:624199 (DN 119:224199)

Abstract

Agglutinin from hemolymph of the grasshopper *M. differentialis* is prepd. by affinity absorption to D-galactose-Sepharose followed by elution with EDTA into buffer contg. CaCl₂. The agglutinin enhances the assocn. of fungal blastospores from *Beauveria bassiana* with hemocyte monolayers 4-6-fold. Blastospores from *Nomuraea rileyi* are not opsonized. The opsonic stimulation occurs when either blastospores or the monolayer is treated with agglutinin prior to **incubation**. The opsonic activity is greatly reduced (approx. 76%) by α-D-Me galactoside, palatinose, and EDTA, all inhibitors of agglutinin carbohydrate binding, and less so (approx. 39%) by agglutinin-specific polyclonal antibody. Trehalose shows no inhibitory effect. In vivo clearance expts. with live insects show that injected *B. bassiana* blastospores treated with agglutinin are removed from the hemolymph 2.2-fold faster than those not treated. Thus, grasshopper agglutinin is an opsonin toward *B. bassiana* blastospores and acts as a mol. bridge between the fungal cell and the hemocyte. Grasshopper agglutinin appears to have a role in the immune recognition of this fungus by cells functioning in defense against invading pathogens.

Supplementary Terms: grasshopper agglutinin immune recognition fungus; *Melanoplus* agglutinin opsonin fungus blastospore

Classification Codes

CA Section Code: Immunochemistry (15)
Section cross-reference(s): 12

Indexing

Index Terms:

Agglutinins and Lectins

Biological Study (BIOL)

galactose-binding; opsonization of fungal blastospores mediated by, of hemolymph of grasshopper

Beauveria bassiana

blastospores of, grasshopper agglutinin from hemolymph mediation of opsonization of, immune defense in relation to

Hemocyte

grasshopper agglutinin opsonization of fungal blastospores for adhesion to, hemolymph clearance after, in immune defense

Hemolymph

immune clearance from, after grasshopper agglutinin opsonization of fungal blastospores

Melanoplus differentialis

agglutinin from hemolymph of, opsonization of fungal blastospores mediated by

Opsonins

Biological Study (BIOL)

grasshopper agglutinin as, fungal blastospores opsonization mediated by, in immune defense

Dates

Entered STN: 27 Nov 1993

Last Update: 27 Nov 1993

Bibliographic Update: 27 Nov 1993

Indexing Update: 27 Nov 1993

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47. Plant-based antiamebic drugs. Part 5. The microbiological transformation of parthenin by **Beauveria bassiana** and *Sporotrichum pulverulentum*

Author: Bhutani, K. K.; Thakur, R. N.

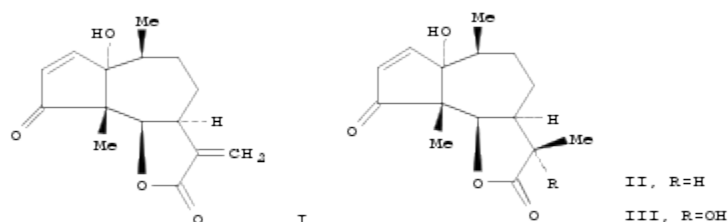
Corporate Source: Reg. Res. Lab.

Source: Phytochemistry (**19911031**), 30(11), pp. 3599-600 *In English*
CODEN: PYTCAS
ISSN: 0031-9422

DOI: 10.1016/0031-9422(91)80073-a

Document Type: Journal
Document ID: 1992:102377 (DN 116:102377)

Abstract



Incubation of parthenin (I) with the fungus *B. bassiana* affords the C-11 redn. product, 1,6β-dihydroxy-11β-methyl-4-oxo-10αH-ambrosa-2-en-12-oic acid-γ-lactone (II). A C-11 hydroxylation product, 1,6β,11α-trihydroxy-11β-methyl-4-oxo-10αH-ambrosa-2-en-12-oic acid-γ-lactone (III), was obtained from the broth of the fungus *S. pulverulentum* using the same substrate.

Supplementary Terms: parthenin metab Beauveria Sporotrichum

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Section cross-reference(s): 30

Indexing

Index Terms:

20555-05-9

Formation, Nonpreparative (FORM)

formation of, from parthenin by Beauveria bassiana

139122-98-8

Formation, Nonpreparative (FORM)
formation of, from parthenin by Sporotrichumpulverulentum

508-59-8, Parthenin
Biological Study (BIOL) Biological Study, Unclassified (BSU)
metab. of, by Beauveriabassiana and Sporotrichumpulverulentum

139122-99-9P
139123-00-5P
Preparation (PREP) Synthetic Preparation (SPN)
prepn. of

69401-55-4
Reactant (RCT) Reactant or Reagent (RACT)
prepn. of

Beauveria bassiana

Chrysosporium lignorum
parthenin biotransformation by

Dates

Entered STN: 20 Mar 1992
Last Update: 09 Oct 2017
Bibliographic Update: 20 Mar 1992
Indexing Update: 09 Oct 2017

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48. Localization of chitinase from the fungus **Beauveria bassiana**

Author: Huang, Xiuli
Corporate Source: Beijing Norm. Univ. Dep. Biol. Beijing, China (CN)
Source: Beijing Shifan Daxue Xuebao, Ziran Kexueban (**19910630**), 27(2), pp. 227-30 *In Chinese*
CODEN: BSDKDH
ISSN: 0476-0301
Document Type: Journal
Document ID: 1992:79996 (DN 116:79996)

Abstract

The localization of chitinase in the **Beauveria bassiana** EU-120 is studied by means of ultrasonic oscillation, differential centrifugation of mycelial homogenates and prepn. of protoplasts. In order to obtain stable

protoplasts, the mycelium is treated with an **incubation** mixt. contg. chitinase, cellulase, and, as an osmotic stabilizer, 0.4M NaCl, in 0.15M phosphate buffer pH 5.5. The activity of chitinase is found essentially in the supernatant from culture soln., and very little in the mycelial cells. The chitinase seems to be located in the periplasm of **Beauveria bassiana** EU-120, and during the growth of the mycelium it is excreted into the culture fluid.

Supplementary Terms: Beauveria periplasm chitinase

Classification Codes

CA Section Code: Microbial, Algal, And Fungal Biochemistry (10)

Indexing

Index Terms:

9001-06-3, Chitinase

Process (PROC)

of Beauveria bassiana, localization of

Beauveria bassiana

chitinase of, localization of

Organelle

periplasm; chitinase in, of Beauveria bassiana

Dates

Entered STN: 06 Mar 1992

Last Update: 06 Mar 1992

Bibliographic Update: 06 Mar 1992

Indexing Update: 06 Mar 1992

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49. Synthesis of isotopically labeled 3-amino-2-phenylpropionic acid and its role as a precursor in the biosynthesis of tenellin and tropic acid

Author: Cox, Russell J.; O'Hagan, David

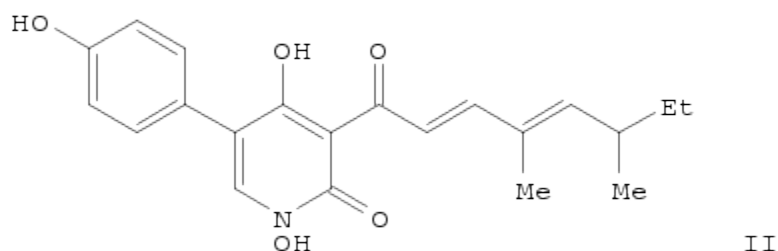
Corporate Source: Univ. Durham Dep. Chem. Durham DH1 3LE, United Kingdom (GB)

Source: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (**19911031**), (10), pp. 2537-40 *In English*

CODEN: JCPRB4

ISSN: 0300-922X

Document Journal

Type:**Document ID:** 1991:679683 (DN 115:279683)**Abstract**

The prepn. of $\text{PhCH}(\text{CO}_2^-)\text{XNH}_3^+$ (I; $\text{X} = {}^{13}\text{CH}_2, {}^{14}\text{CH}_2$) starting from PhCH_2Cl and labeled KCN is described. The incorporation of I into tenellin (II) and tropic acid, $\text{PhCH}(\text{CO}_2\text{H})\text{CH}_2\text{OH}$, by **incubation** in **Beauveria bassiana** and *Datura innoxia* was studied but proved unsuccessful in each case.

Supplementary Terms: tenellin biosynthesis labeled aminophenylpropanoate; tropic acid biosynthesis labeled aminophenylpropanoate

Classification Codes

CA Section Code: Biomolecules And Their Synthetic Analogs (26)

Section cross-reference(s): 10, 11

Indexing**Index Terms:**

53823-15-7P

552-63-6P, Tropic acid

Biological Study (BIOL) Biosynthetic Preparation (BPN) Preparation (PREP) Synthetic Preparation (SPN)
biosynthesis of, labeled aminophenylpropionic acid in

137531-60-3P

137531-61-4P

30698-30-7P, Methyl phenylcyanoacetate

Preparation (PREP) Reactant (RCT) Reactant or Reagent (RACT) Synthetic Preparation (SPN)
prepn. and catalytic hydrogenation of

137531-64-7P

137531-65-8P

4370-95-0P, 3-Amino-2-phenylpropionic acid

Preparation (PREP) Synthetic Preparation (SPN)
prepn. and role of, in biosynthesis of tenellin and tropic acid

137531-63-6P

137661-48-4P

91012-17-8P

99092-02-1P

Preparation (PREP) Reactant (RCT) Reactant or Reagent (RACT) Synthetic Preparation (SPN)
prepn. and sapon. of

4701-32-0P

83552-81-2P

Preparation (PREP) Synthetic Preparation (SPN)
prepn. and sapon. of

151-50-8

25909-68-6

5373-08-0

Reactant (RCT) Reactant or Reagent (RACT)
prepn. and sapon. of

140-29-4P, Benzyl cyanide

24420-97-1P, Benzonitrile-cyano-14C

32950-71-3P, Benzonitrile-cyano-13C

Preparation (PREP) Synthetic Preparation (SPN)
prepn., addn. reaction with carbon dioxide, and esterification of

100-44-7, Benzyl chloride

Reactant (RCT) Reactant or Reagent (RACT)
substitution of, with labeled cyanide

Dates

Entered STN: 27 Dec 1991

Last Update: 09 Oct 2017

Bibliographic Update: 27 Dec 1991

Indexing Update: 09 Oct 2017

50. Partial purification and characterization of β -galactosidase produced by *Beauveria bassiana*

Author: MacPherson, James M.; Khachatourians, George G.
Corporate Source: Univ. Saskatchewan Dep. Appl. Microbiol. Food Sci. Saskatoon, Saskatchewan (SK) S7N 0W0, Canada (CA)
Source: Biotechnology and Applied Biochemistry (**19910430**), 13(2), pp. 217-30 *In English*
CODEN: BABIEC
ISSN: 0885-4513
Document Type: Journal
Document ID: 1991:243259 (DN 114:243259)

Abstract

β -Galactosidase has been partially purified from cell-free exts. of the entomopathogenic fungus *B. bassiana* by ammonium sulfate pptn. and CM-Sephadex chromatog. followed by size fractionation of pooled β -galactosidase on Sephadex G-150. The M_r of this enzyme was estd. to be 290,000. Enzyme activity was optimal at pH 6.6 to 7.0 at 50°, and rapidly decreased during **incubation** at 60°. Nondenaturing PAGE indicated that a single polypeptide is responsible for β -galactosidase activity. The cations calcium or zinc were required for activity in addn. to phosphate and potassium. In addn. 2-mercaptoethanol enhanced activity. Galactose severely inhibited β -galactosidase activity in contrast to glucose which had no effect on enzyme activity.

Supplementary Terms: *Beauveria* beta galactosidase

Classification Codes

CA Section Code: Enzymes (7)
Section cross-reference(s): 5, 10

Indexing

Index Terms:

9031-11-2P, β -Galactosidase
Preparation (PREP)
of *Beauveria bassiana*, purifn. and characterization of, cell growth in relation to

Beauveria bassiana

galactosidase of, purifn. and characterization of, cell growth and bioinsecticide usage in relation to

Microorganism growth
of *Beauveria bassiana*, galactosidase in relation to

Dates

Entered STN: 28 Jun 1991
Last Update: 28 Jun 1991
Bibliographic Update: 28 Jun 1991
Indexing Update: 28 Jun 1991

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51. Origin and expression of phosphatase activity in a semi-arid grassland soil

Author: Nakas, J. P.; Gould, W. D.; Klein, D. A.
Corporate Source: Coll. Environ. Sci. For.
Source: Soil Biology & Biochemistry (**1987**), 19(1), pp. 13-18 *In English*
CODEN: SBIOAH
ISSN: 0038-0717
DOI: 10.1016/0038-0717(87)90118-0
Document Type: Journal
Document ID: 1987:406336 (DN 107:6336)

Abstract

The phosphatase activity of a grassland soil and some of the microorganisms producing phosphatase were characterized. Soil supplemented with casamino acids (1% wt./wt.) had increased alk. phosphatase activity (pH 8.5) after 2 days of **incubation**, with a decrease to the original level after 24 days. No increase in phosphatase activity was obsd. at pH values of 5.5 or 6.5. Antibiotics were added to several soil samples to suppress either bacterial or fungal activity. Alk. phosphatase activity did not increase in soils supplemented with casamino acids when the fungi were suppressed. These data may help to explain why correlations between phosphatase activity and crop yield are inconsistent.

Supplementary Terms: grassland soil phosphatase microorganism

Classification Codes

CA Section Code: Fertilizers, Soils, And Plant Nutrition (19)

Section cross-reference(s): 10

Indexing

Index Terms:

9001-77-8, Acid phosphatase

9001-78-9

Biological Study (BIOL)

of semi-arid grassland soils and soil microorganisms

Absidia

Alternaria alternata
Arthrobacter
Aspergillus
Azotobacter
Bacillus
Beauveria bassiana
Chaetomium spirale
Chromobacterium lividum
Chrysosporium pannorum
Flavobacterium ferrugineum
Gymnoascus reessii
Microorganism, soil
Myrothecium roridum
Penicillium
Trichoderma
Xanthomonas fragariae
phosphatases of semi-arid grassland soils and

Bacteria
Fungi
soil; phosphatases of semi-arid grassland soils and

Bouteloua gracilis
phosphatases of semi-arid grassland soils and roots of

Soils
Aridic Argiustolls; phosphatase of

Dates

Entered STN: 11 Jul 1987
Last Update: 11 Jul 1987
Bibliographic Update: 11 Jul 1987
Indexing Update: 11 Jul 1987

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52. Surface culture in plastic trays and their possible utilization on an industrial level

Author: Kybal, Jan
Corporate Source: Vyzk. Ustav Farm. Biochem.
Source: Kvasny Prumysl (**1985**), 31(7-8), pp. 177-80 *In Czech*
CODEN: KVPRAB
ISSN: 0023-5830

DOI: 10.18832/kp1985042
Document Type: Journal
Document ID: 1986:87028 (DN 104:87028)

Abstract

Selection of *Claviceps purpurea* from 1971 to 1984 yielded strains which form 10% dry sclerotia in which the ergotoxin [8006-25-5] and ergotamine [113-15-5] contents had reached ~2.5 and 1.5%, resp. Large-scale cultures in 1.2 × 2.4 m polyethylene trays yield 10¹⁴ conidia/m²; the germinability is >90%. The conidia are used for inoculation of submerged-culture tanks and host crops in the field. The surface **incubation** is used for manuf. of the bioinsecticide Boverol contg. 10¹⁰ **Beauveria bassiana** aerial conidia/g.

Supplementary Terms: Beauveria Boverol surface culture; ergot alkaloid surface culture; fungi conidia surface culture

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Indexing

Index Terms:

113-15-5P

8006-25-5P

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP)
manuf. of, by surface culture of *Claviceps purpurea*

Beauveria bassiana

cultivation of, by surface culture

Ergot

C. purpurea; alkaloids prodn. by surface culture of

Fermentation

fungi cultivation by, in surface culture

Dates

Entered STN: 22 Mar 1986

Last Update: 22 Mar 1986

Bibliographic Update: 22 Mar 1986

Indexing Update: 22 Mar 1986

53. Tobacco aroma modifying agent

Inventor: Barnes, Adrian Gordon; Bevan, Peter Charles
Patent Assignee: British-American Tobacco Co. Ltd., United Kingdom (GB)
Source: Ger. Offen. pp. 14 *In German*
 CODEN: GWXXBX
Document Type: Patent
Document ID: 1985:22794 (DN 102:22794)

Patent Information

Publication			Application		Priority	
Number	Kind	Date	Number	Date	Number	Date
DE3402893	A1	19840809	DE1984-3402893	19840127	GB1983-3406	19830208

Patent Family

CAplus Extended Family Count: 1
 1985:22794

Country count: 3
Patent Number Count: 4
 [Country Count and Patent Number Count are based on CAplus family]

Publication			Application		Priority		Update
Number	Kind	Date	Number	Date	Number	Date	Date
GB2135302	A	19840830	GB1984-1582	19840120	GB1983-3406	19830208	31 Oct 1998
GB2135302	B	19860716	GB1984-1582	19840120	GB1983-3406	19830208	
DE3402893*	A1	19840809	DE1984-3402893	19840127	GB1983-3406	19830208	31 Oct 1998
CH659366	A5	19870130	CH1984-515	19840203	GB1983-3406	19830208	31 Oct 1998

[* indicates basic patents]

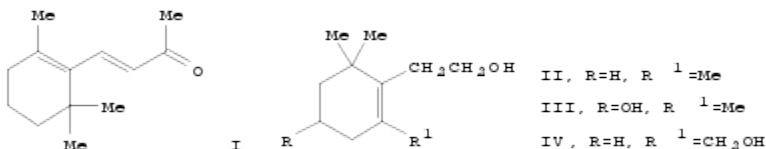
Patent Classifications

Publication Number	Kind	Class	Classification Codes
GB2135302	A	IPCI	C07C0033/14
		IPCR	A23L0027/20; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		CPC	A23L0001/2265; A23L0001/23; A23L0027/203; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		ECLA	A23L1/226D; A23L1/23; A24B15/20; A24B15/34; C07C33/14; C07C35/18; C12P7/02
GB2135302	B	IPCI	C07C0033/14
		IPCR	A23L0027/20; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		CPC	A23L0001/2265; A23L0001/23; A23L0027/203; A23L0027/24; A24B0015/20; A24B0015/34;

		ECLA	C07C0033/14; C07C0035/18; C12P0007/02
			A23L1/226D; A23L1/23; A24B15/20; A24B15/34; C07C33/14; C07C35/18; C12P7/02
DE3402893*	A1	IPCI	A23L0001/232; C12P0001/02; A24B0015/18; A23L0027/20; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		IPCR	A23L0027/20; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		CPC	A23L0001/2265; A23L0001/23; A23L0027/203; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		ECLA	A23L1/226D; A23L1/23; A24B15/20; A24B15/34; C07C33/14; C07C35/18; C12P7/02
CH659366	A5	IPCI	A24B0015/30; C07C0033/14
		IPCR	A23L0027/20; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		CPC	A23L0001/2265; A23L0001/23; A23L0027/203; A23L0027/24; A24B0015/20; A24B0015/34; C07C0033/14; C07C0035/18; C12P0007/02
		ECLA	A23L1/226D; A23L1/23; A24B15/20; A24B15/34; C07C33/14; C07C35/18; C12P7/02

[* indicates basic patents]

Abstract



β -Ionone (I) [79-77-6] is transformed by fermn. with selected fungi to 3 compds. that improve the aroma and flavor of tobacco and tobacco smoke. Thus, *Cladosporium oxysporum* CBS 548.80 was cultured by shaking for 5 days in 100 mL pH 5.4 medium contg. malt ext. 17 and peptone 3 g/L. A soln. of 100 mg I dissolved in Tween 80 was added and **incubation** was continued for 7 days. The broth was extd., the ext. concd., and the conc. chromatographed on thin-layer plates to sep. 2,6,6-trimethyl-1-cyclohexen-1-ethanol (II) [472-65-1], 4-hydroxy-2,6,6-trimethyl-1-cyclohexen-1-ethanol (III) [83646-54-2], and 2-hydroxymethyl-6,6-dimethyl-1-

cyclohexen-1-ethanol (IV) [93824-38-5].

Supplementary Terms: ionone transformation fungi tobacco flavorant

Classification Codes

CA Section Code: Fermentation And Bioindustrial Chemistry (16)

Section cross-reference(s): 11

Indexing

Index Terms:

472-65-1P

83646-54-2P

93824-38-5P

Bioindustrial Manufacture (BMF) Biological Study (BIOL) Preparation (PREP)
manuf. of, by fungi, for use as tobacco flavorant

79-77-6

Process (PROC)

transformation of, by fungi to tobacco flavorants

Abortiporus biennis

Beauveria bassiana

Cladosporium oxysporum

Fungi

Ophiobolus herpetrichus

tobacco flavorants manuf. with, from ionone

Fermentation

of ionone, by fungi

Tobacco products

flavorants for, ionone transformation products from fungi as

Dates

Entered STN: 26 Jan 1985

Last Update: 31 Oct 1998

Bibliographic Update: 26 Jan 1985

Patent Family Update: 31 Oct 1998

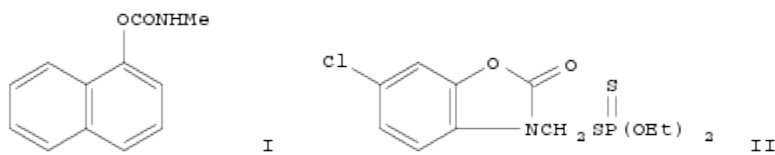
Indexing Update: 26 Jan 1985

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54. Compatibility of biological preparations with insecticides

Author: Zayats, Yu. V.; Kiselek, E. V.
Corporate Source: Vses. Inst. Zashch. Rast. Lazarev. Parazit. Lazarev, USSR (SU)
Source: Khimiya v Sel'skom Khozyaistve (1963-1987) (**19790630**), 17(6), pp. 54-6 *In Russian*
CODEN: KSKZAN
ISSN: 0023-1185
Document Type: Journal
Document ID: 1979:518571 (DN 91:118571)

Abstract



A 6-h **incubation** of *Bacillus thuringiensis* and *Beauveria bassiana* preps. with 0.1% chlorophos [52-68-6], Sevin (I) [63-25-2], or phosalone (II) [2310-17-0] only slightly decreased the nos. and viability of the beneficial entomopathogens. A Boverin-chlorophos mixt. [39283-58-4] (0.1 and 0.05%, resp.) after a 24-h **incubation** retained its toxicity for Colorado potato beetle.

Supplementary Terms: insecticide entobacterin Boverin compatibility

Classification Codes

CA Section Code: Agrochemicals (5)

Indexing

Index Terms:

2310-17-0
52-68-6
63-25-2
Biological Study (BIOL)
boverin and entobacterin compatibility with

39283-58-4
Properties (PRP)
toxicity of, to Colorado potato beetle

Bacillus thuringiensis
Beauveria bassiana
insecticides compatibility with

Leptinotarsa decemlineata
boverin-chlorophos mixt. effect on

Dates

Entered STN: 12 May 1984
Last Update: 12 May 1984
Bibliographic Update: 12 May 1984
Indexing Update: 12 May 1984

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55. Conversion of steroids with microorganisms

Author: Schubert, Alfred; Heller, Karl; Onken, Dieter; Schwarz, Sigfrid; Siebert, Rudolf; Zaumseil, Joachim
Corporate Source: V.E.B. Jenapharm
Source: Zeitschrift fuer Chemie (**1962**), 2 pp. 289-97
CODEN: ZECEAL
ISSN: 0044-2402
Document Type: Journal
Document ID: 1963:23142 (DN 58:23142)

Abstract

The method of the microbiol. conversion of steroids, their isolation, and the elucidation of their structure (by phys., phys.-chem., chem., and microbiol. means) were described. The results of the investigation indicated that in all conversions mixts. formed, whose compn. depended on the strain used, the substrate added, and the conditions occurring during **incubation**. Preparative charges were conducted in fermenters up to 120 l. Aeration was carried out at a rate of 15-25 l. air/l. culture soln./hr. Czapek-Dox soln. or a nutrient soln. contg.

glucose and peptone was used. Cornsteep liquor was added to all nutrient media. The inoculation of the sterilized medium was made with a preliminary culture in a ratio of 1:20. After the optimum growth of the mycelium (mostly after 1-2 days), the steroid in Me₂CO was added portionwise, the concn. of steroid being 1 g./l. culture soln. The complete reaction of the steroid was detd. by paper chromatography. The culture soln. was then filtered or, in some cases, centrifuged and the mycelium was washed with H₂O and CH₂Cl₂. The steroids were extd. with CH₂Cl₂ and the combined exts. were concd. to obtain the principal reaction products. On occasion, when several products were formed, column chromatography on silica gel was used to effect their sepn., using CH₂Cl₂ with increasing amts. of Me₂CO for elution. The following results were obtained (the newly introduced OH group(s) is italicized) [steroid added, microorganism, compd. isolated, m.p., [α]²⁰_D (in CHCl₃ unless otherwise stated) given]: monohydroxylation of steroids contg. no CH group: progesterone (I), *Circinella*, 9 α -hydroxyprogesterone (Ia), 190-2°, 187°; I, *Rhizopus nigricans*, 11 α -hydroxyprogesterone (11), 167°, 176°; I, *Dactylium dendroides*, II, 167°, 176°; I, *Curvularia falcata*, 11 β -hydroxyprogesterone (III), 186-8°, 217° (Me₂CO); I, *C. lunata*, III, 186-8°, 217° (Me₂CO); I, *C. lunata*, 14 α -hydroxyprogesterone (IV), 185-8°, 190°; I, *Naematoloma sublateritium*, IV, 185-8°, 190°; I, *Fusarium lycopersici*, 15 α -hydroxyprogesterone (IVa), 232°, 218°; I, *Beauveria bassiana*, 11 α -hydroxytestosterone, 177-9°, 94.5°; I, *D. dendroides*, 17 α -hydroxyprogesterone (V), 213-15°, 97°; monohydroxylation of steroids with 1 OH group: Ia, *Absidia glauca*, 9 α , 11 α -dihydroxyprogesterone, 207-9°, 161°; Ia, *Circinella*, 9 α , 14 α -dihydroxyprogesterone (VI), 272-3°, 179°; Ia, *Calonectria decora*, 9 α , 15 α -dihydroxyprogesterone, 240-2°, 212°; II, *A. glauca*, 7 α , 11 α -dihydroxyprogesterone (VII), 233-6°, 124°; II, *C. decora*, 11 α , 15 α -dihydroxyprogesterone, 182-3°, 180° (MeOH); 11 α -hydroxypregnane-3,20-dione, *C. decora*, 11 α , 15 α -dihydroxypregnane-3,20-dione, 175-7°, 108.5°; 11 α -hydroxyallopregnane-3,20-dione, *C. decora*, 11 α , 15 α -dihydroxyallopregnane-3,20-dione, 208-10°, 105°; III, *A. glauca*, 7 α -hydroxypregn-4-ene-3,11,20-trione, 229-32°, 215° (MeOH); III, *C. decora*, 11 β , 15 α -dihydroxyprogesterone, 173-5°, 230°; 12 α -hydroxyprogesterone, *C. decora*, 15 α -hydroxypregn-4-ene-3,12,20-trione, 235-9°, 261°; IV, *C. lunata*, 6 β , 14 α -dihydroxyprogesterone (VIII), 246-9°, 124°; IV, *N. sublateritium*, VIII, 246-9°, 124°; IV, *Circinella*, VI (9 α -OH introduced), 272-3°, 179°; IV, *C. decora*, 12 β , 14 α -dihydroxyprogesterone, 240-2°, 129°; IVa, *C. decora*, 12 β , 15 α -dihydroxyprogesterone (IX), 218°, 186° (MeOH); V, *A. glauca*, 11 α , 17 α -dihydroxyprogesterone, 217-20°, 80°; 21-hydroxyprogesterone (X). *R. nigricans*, 11 α , 21-dihydroxyprogesterone, 158-9°, 171°; X, *N. sublateritium*, 14 α , 21-dihydroxyprogesterone, 175-6°, 190°; X, *C. decora*, 15 α , 21-dihydroxyprogesterone, 224-6°, 212°; monohydroxylation of steroids with 2 OH groups: 17 α , 21-dihydroxypregn-4-ene-3,20-dione (XI), *R. nigricans*, 11 α , 17 α , 21-trihydroxypregn-4-ene-3,20-dione (XII), 209-12°, 113°; XI, *B. bassiana*, XII, 209-12°, 113°; XI, *A. glauca*, XII, 209-12°, 113°; XI, *C. lunata*, 11 β , 17 α , 21-trihydroxypregn-4-ene-3,20-dione (XIII), 218-20°, 160° (MeOH); XI, *A. glauca*, XIII, 218-20°, 160° (MeOH); 3 α , 6 α -dihydroxypregnan-2-one, *C. decora*, 3 α , 6 α , 11 α -trihydroxypregnan-20-one, 217-21°, 56° (MeOH); XI, *C. decora*, 15 α , 17 α , 21-trihydroxypregn-4-ene-3,20-dione, 218-21°, 136° (MeOH); dihydroxylation of steroids with no OH group: I, *Cunninghamella blakesleeana*, VIII (both OH groups introduced), 246-9°, 124°; I, *Cunninghamella elegans*, VIII, 246-9°, 124°; I, *N. sublateritium*, VIII, 246-9°, 124°; I, *Mucor mucedo*, VIII, 246-9°, 124°; I, *Trichothecium roseum*, VIII, 246-9°, 124°; I, *C. lunata*, VIII, 246-9°, 124°; I, *A. glauca*, VII (both OH groups introduced), 233-6°, 124°; I, *C. lunata*, 7 α , 14 α -dihydroxyprogesterone, 252-5°, 175°; I, *Circinella*, V (9 α , 14 α -dihydroxy groups introduced), 272-3°, 179°; I, *C. lunata*, 11 β , 14 α -dihydroxyprogesterone, 224-7°, 219° (MeOH); I, *C. decora*, IX (both OH groups introduced), 218°, 139°; pregnane-3,20-dione, *C. decora*, 12 β , 15 α -dihydroxypregnane-3,20-dione, 225-31°, 56°; allopregnane-3,20-dione, *C. aecora*, 12 β , 15 α -dihydroxyallopregnane-3,20-dione, 253-7°, 70° (MeOH); dihydroxylation of steroids with 1 OH group: 3 β -hydroxypregn-5-en-20-one (XIV), *A. glauca*, 3 β , 7 α , 11 α -trihydroxypregn-5-en-20-one,

235-7°, 77° (MeOH); XIV, *C. decora*, IX (both OH groups introduced), 218°, 139°; III, *C. decora*, 11 β ,12 β ,15 α -trihydroxyprogesterone, 229-31°, 148°; other hydroxylations: 11-oxoprogesterone, *C. decora*, 15 α -hydroxypreg-4-ene-3,6,20-trione, 224-8°, 289°; pregnane-3,6,20-trione, *C. decora*, 15 α -hydroxypregnane-3,6,20-trione, 218-20°, 84°.

Classification Codes

CA Section Code: Fermentations (74)

Indexing

Index Terms:

889467-68-9P

Preparation (PREP) Properties (PRP) Synthetic Preparation (SPN)

Conversion of steroids with microorganisms

91548-86-6

Derived from data in the 7th Collective Formula Index (1962-1966)

3066-12-4P, Androst-4-en-3-one, 11 α ,17 β -dihydroxy-

Preparation (PREP)

formation by *Beauveria bassiana*

100153-24-0P, Pregn-4-ene-3,12,20-trione, 15 α -hydroxy-

564-40-9P, 5 β -Pregnane-3,20-dione, 12 β ,15 α -dihydroxy-

564-46-5P, 5 β -Pregnane-3,20-dione, 11 α ,15 α -dihydroxy-

595-68-6P, Pregn-4-ene-3,20-dione, 12 β ,14-dihydroxy-

640-70-0P, Pregn-4-ene-3,20-dione, 9,15 α -dihydroxy-

894767-14-7P, 5 β -Pregnane-3,6,20-trione, 15 α -hydroxy-

Preparation (PREP)

formation by *Calonectriadecora*

600-67-9P, Pregn-4-ene-3,20-dione, 11 α ,21-dihydroxy-

Preparation (PREP)

formation by *Rhizopus nigricans*

100153-21-7P, Pregn-4-ene-3,11,20-trione, 7 α -hydroxy-

1865-73-2P, Pregn-5-en-20-one, 3 β ,7 α ,11 α -trihydroxy-

599-24-6P, Pregn-4-ene-3,20-dione, 9,11 α -dihydroxy-

600-42-0P, Pregn-4-ene-3,20-dione, 7 α ,11 α -dihydroxy-

603-98-5P, Pregn-4-ene-3,20-dione, 11 α ,17-dihydroxy-

Preparation (PREP)

formation of, by *Absidiaglauc*

803-08-7P, Pregn-4-ene-3,20-dione, 15 α ,17,21-trihydroxy-

Preparation (PREP)

formation of, by *Calonectriadecora*

100153-20-6P, Pregn-4-ene-3,6,20-trione, 15 α -hydroxy-

564-38-5P, Pregn-4-ene-3,20-dione, 11 β ,12 β ,15 α -trihydroxy-
564-39-6P, 5 α -Pregnane-3,20-dione, 12 β ,15 α -dihydroxy-
564-47-6P, 5 α -Pregnane-3,20-dione, 11 α ,15 α -dihydroxy-
599-14-4P, Pregn-4-ene-3,20-dione, 12 β ,15 α -dihydroxy-
599-16-6P, Pregn-4-ene-3,20-dione, 11 β ,15 α -dihydroxy-
599-17-7P, Pregn-4-ene-3,20-dione, 15 α ,21-dihydroxy-
600-45-3P, 5 β -Pregnan-20-one, 3 α ,6 α ,11 α -trihydroxy-
640-33-5P, Pregn-4-ene-3,20-dione, 11 α ,15 α -dihydroxy-
Preparation (PREP)
formation of, by *Calonectriadecora*

595-67-5P, Pregn-4-ene-3,20-dione, 9,14-dihydroxy-
Preparation (PREP)
formation of, by *Circinella*

599-25-7P, Pregn-4-ene-3,20-dione, 11 β ,14-dihydroxy-
640-30-2P, Pregn-4-ene-3,20-dione, 7 α ,14-dihydroxy-
Preparation (PREP)
formation of, by *Curvularialunata*

600-73-7P, Pregn-4-ene-3,20-dione, 15 α -hydroxy-
Preparation (PREP)
formation of, by *Fusariumlycopersici*

595-71-1P, Pregn-4-ene-3,20-dione, 14,21-dihydroxy-
Preparation (PREP)
formation of, by *Naematolomasublateritium*

15981-54-1P, Pregn-4-ene-3,20-dione, 9-hydroxy-
Preparation (PREP)
formation of, by *circinella*

50-23-7P, Cortisol
566-35-8P, Pregn-4-ene-3,20-dione, 11 α ,17,21-trihydroxy-
599-27-9P, Pregn-4-ene-3,20-dione, 6 β ,14-dihydroxy-
600-57-7P, Pregn-4-ene-3,20-dione, 11 β -hydroxy-
68-96-2P, Pregn-4-ene-3,20-dione, 17-hydroxy-
80-75-1P, Pregn-4-ene-3,20-dione, 11 α -hydroxy-
Preparation (PREP)
formation of, by microorganisms

2738-35-4, Progesterone, 3-ethyl enol ether
hydroxylation of, by microorganisms

16031-66-6P, Pregn-4-ene-3,20-dione, 14-hydroxy-
Preparation (PREP)
manuf. by microorganisms

Absidia glauca
Calonectria decora

Circinella
Curvularia falcata
Curvularia lunata
Microorganisms
Naematoloma sublateritium
Rhizopus nigricans
steroid hydroxylation by

Beauveria bassiana

Cunninghamella blakesleeana
Cunninghamella elegans
Dactylium dendroides
Fusarium lycopersici
Mucor mucedo
Trichothecium roseum
progesterone hydroxylation by

Fermentation
steroid hydroxylation by, by microorganisms

Steroids
hydroxylation of, by microorganisms

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