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Señores

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO**  
**DIVISION DE NUEVAS CREACIONES**  
E. S. D.

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO**

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Fecha (CMB): 2005-10-31 16:43:49  
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Recepciones: 2005 DIVISION DE NUEVAS CREACIONES

REF: Expediente No. 05 108.673 - Solicitud de Patente  
a favor de **THE BOARD OF REGENTS FOR OKLAHOMA STATE UNIVERSITY**

Titulada: **ANTIGENOS PROTECTORES Y VACUNAS PARA EL CONTROL DE INFESTACIONES DE GARRAPATAS DE MULTIPLES ESPECIES**

**JUAN PABLO CADENA SARMIENTO**, vecino de Bogotá, portador de la tarjeta profesional No. 57492, obrando como apoderado de la sociedad **THE BOARD OF REGENTS FOR OKLAHOMA STATE UNIVERSITY**, me permito anexar:

1. Listado de secuencias.

De la señora jefe atentamente,

  
**JUAN PABLO CADENA SARMIENTO**  
C.C. No. 80.410.337 de Usaquén  
Cra 7 No. 16-56 Piso 9

Bogotá, 31 de Octubre de 2005  
CHP/MEV/aec

LISTADO DE SECUENCIAS

<110> De La Fuente, Jose de Jesus  
Kocan, Katherine M..  
Garcia-Almazan, Consuelo  
Blouin, Edwin F.

<120> Antigenos Protectores y Vacunas para el Control de Infestación de  
Múltiples Especies

<130> 04-597

<150> 10/425,563

<151> 2003-04-29

<150> 60/376,251

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761

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| Lys Pro Ala Leu Lys Leu Lys Ile Lys Ile Gly Gly Gln Thr Val Glu | 65  | 70  | 75  |
| Lys Asn Val Thr Lys Leu Lys Gln Gln Arg Pro Pro Pro Pro Asp Pro | 85  | 90  | 95  |
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| Thr Ser Ala Asp Ser Asp Asp Glu Glu Glu Ala Trp Leu Glu Ala Leu | 115 | 120 | 125 |
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| Asp Pro Thr Leu Met Thr Ala Arg Gln Arg Ala Leu Leu Glu Ser Lys | 145 | 150 | 155 |
| Ser Gln Lys Asp Glu Val Pro Ala Thr Gly Met Ala Gly Val Arg Gly | 165 | 170 | 175 |
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 <212> PRT  
 <213> Ixodes scapularis

<400> 12

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Asn Phe Pro Ala Asp Ala Ser Leu Gln Leu Gly Thr Asn Gly Pro Val  
35 40 45

Gln Lys Met Asp Pro Leu Thr Asn Leu Gln Val Ala Ile Lys Asn Asn  
50 55 60

Val Asp Val Phe Tyr Phe Ser Cys Leu Val Pro Met His Val Leu Ser  
65 70 75 80

Thr Glu Asp Gly Leu Met Asp Lys Arg Val Phe Leu Ala Thr Trp Lys  
85 90 95

Asp Ile Pro Ala Gln Asn Glu Val Gln Tyr Thr Leu Asp Asn Val Asn  
100 105 110

Leu Thr Ala Asp Gln Val Ser Gln Lys Leu Gln Asn Asn Asn Ile Phe  
115 120 125

Thr Ile Ala Lys Arg Asn Val Asp Gly Gln Asp Met Leu Tyr Gln Ser  
130 135 140

Leu Lys Leu Thr Asn Gly Ile Trp Val Leu Ala Glu Leu Lys Ile Gln  
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Pro Gly Asn Pro Arg Ile Thr Leu Ser Leu Lys Thr Arg Ala Pro Glu  
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Val Ala Ala Gly Val Gln Gln Thr Tyr Glu Leu Ile Leu His Ser  
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<220>  
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<222> (701)..(701)  
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 <211> 372  
 <212> PRT  
 <213> Ixodes scapularis

<220>  
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 <222> (234)..(234)  
 <223> Xaa puede ser cualquier aminoácido que ocurre naturalmente

<400> 14

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 20 25 30

Gly Glu Asp Phe Ser Glu Thr Leu Thr Arg Ala Lys Phe Glu Glu Leu  
 35 40 45

Asn Met Asp Leu Phe Arg Ser Thr Met Lys Pro Val Gln Lys Val Leu  
 50 55 60

Glu Asp Gly Asp Leu Lys Lys Thr Asp Val Asp Glu Ile Val Leu Val  
 65 70 75 80

Gly Gly Ser Thr Arg Ile Pro Lys Val Gln Gln Leu Val Lys Glu Phe  
 85 90 95

Phe Asn Gly Lys Glu Pro Thr Arg Gly Ile Asn Pro Asp Glu Ala Val  
 100 105 110

Ala Tyr Gly Ala Ala Val Gln Ala Gly Val Leu Gly Gly Glu Glu Asp  
 115 120 125

Thr Gly Asp Leu Val Leu Leu Asp Val Asn Pro Leu Thr Leu Gly Ile  
 130 135 140

Glu Thr Val Gly Gly Val Met Thr Lys Leu Ile Pro Arg Asn Thr Val  
 145 150 155 160

Ile Pro Thr Lys Lys Ser Gln Ile Phe Ser Thr Ala Ser Asp Glu Gln  
 165 170 175

Ser Thr Val Thr Ile Gln Val Phe Glu Gly Glu Arg Pro Leu Thr Lys  
 180 185 190

Asp Asn His Gln Leu Gly Lys Phe Asp Leu Thr Gly Ile Pro Pro Ala  
 195 200 205

16 72

Pro Arg Gly Val Pro Gln Ile Glu Val Thr Phe Glu Ile Asp Val Asn  
210 215 220

Gly Ile Leu Arg Val Ser Ala Glu Asp Xaa Gly Thr Gly Asn Lys Gln  
225 230 235 240

Lys Ile Thr Ile Asn Asn Asp Gln Asn Arg Leu Thr Pro Glu Asp Ile  
245 250 255

Glu Arg Met Val Lys Asp Ala Glu Lys Phe Ala Asp Glu Asp Lys Lys  
260 265 270

Val Lys Glu Lys Val Glu Ala Arg Asn Glu Leu Glu Ser Tyr Ala Tyr  
275 280 285

Ser Leu Lys Asn Gln Ile Gly Asp Lys Glu Lys Met Gly Gly Lys Leu  
290 295 300

Ser Asp Glu Asp Lys Lys Thr Ile Glu Gln Ala Val Asp Glu Lys Ile  
305 310 315 320

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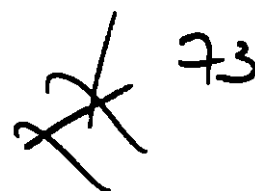
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Lys Asp Glu Leu  
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<211> 1847  
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<213> Ixodes scapularis

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<222> (1814)..(1814)  
<223> n es a, c, g, or t

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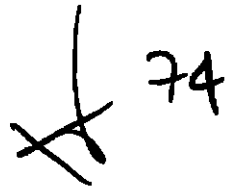
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<210> 16  
 <211> 497  
 <212> PRT  
 <213> *Ixodes scapularis*

<400> 16

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Tyr Lys Tyr Ser Phe Lys Gly Pro Tyr Leu Ala Gln Lys Asp Gly Ser  
 35 40 45

Val Pro Phe Trp Glu Tyr Gly Gly Asn Cys Ile Ala Ser Glu Glu Met  
 50 55 60

Val Arg Ile Thr Pro Ser Leu Lys Ser Lys Lys Gly Ser Ile Trp Ser  
 65 70 75 80

Lys Leu Pro Thr Ser Phe Pro Trp Trp Glu Val Glu Leu Val Phe Arg  
 85 90 95

Thr Thr Gly Thr Gly Arg Ile Gly Ala Asp Gly Leu Ala Phe Trp Tyr  
 100 105 110

Thr Asp Lys Lys Gln Ala Glu Gly Pro Val Phe Gly Ser Ser Asp Lys  
 115 120 125

Trp Thr Gly Leu Ala Ile Phe Phe Asp Ser Phe Asp Asn Asp Asn Lys  
 130 135 140

His Asn Asn Pro Tyr Ile Met Gly Met Val Asn Asp Gly Thr Lys Ala  
 145 150 155 160

Tyr Asp His Glu Ser Asp Gly Ala Asn Gln Gln Leu Ala Gly Cys Gln  
 165 170 175

Arg Asp Phe Arg Asn Lys Pro Tyr Pro Val Arg Ala Lys Ile Glu Tyr  
 180 185 190

Phe Asn Asn Ile Leu Thr Val Leu Phe His Asn Gly Asn Thr Asn Asn  
 195 200 205

Asp Gly Asp Tyr Glu Met Cys Phe Arg Ala Glu Asn Val Phe Leu Pro  
 210 215 220

Thr Asn Gly His Phe Gly Val Ser Ala Ala Thr Gly Gly Leu Ala Asp  
 225 230 235 240

Asp His Asp Ala Leu Lys Phe Leu Thr Thr Ser Leu His Ala Glu Gly  
 245 250 255

Thr Gln Pro Ala Leu Ala Gln Gly Met Ala Asp Ser Glu Lys Glu Lys  
 260 265 270

Phe Ser Lys Glu Tyr Glu Val Tyr Lys Asp Lys Leu Glu Lys Gln Lys

75

|                                                                 |     |             |
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| 275                                                             | 280 | 285         |
| Glu Glu Tyr Arg Lys Thr His Pro Glu Glu Ala Ala Lys Gln Ala Met |     |             |
| 290                                                             | 295 | 300         |
| Glu His Gly Pro Glu Gln Ala Tyr Asp Thr Gln Gln Gln Arg Glu Leu |     |             |
| 305                                                             | 310 | 315 320     |
| Arg Gln Ile Phe Glu Gly Gln Ser His Lys Leu Phe Glu Gly Leu Lys |     |             |
|                                                                 | 325 | 330 335     |
| Ala Leu His Arg Lys Leu Asp Glu Val Leu Gly Arg Gln Glu Arg Thr |     |             |
|                                                                 | 340 | 345 350     |
| Leu Ser Leu Val Ser Ala Gly Gly Ala Gly Val Ala Val Gly Gly Val |     |             |
|                                                                 | 355 | 360 365     |
| Pro Pro Pro Gln Met Gly Gly Val Pro Ser Leu Gln Arg His Glu Ala |     |             |
|                                                                 | 370 | 375 380     |
| Glu Ser Leu Leu Ser Ser Gln Arg Glu Leu Leu Gln Thr Val Ala Gln |     |             |
|                                                                 | 385 | 390 395 400 |
| Val Lys Ser Phe Val Ala Glu Val His Gln Arg Thr Ala Thr Leu Gln |     |             |
|                                                                 | 405 | 410 415     |
| His Gln Gly Ala Gly Gly Thr Gln Gly Leu Thr Ala Glu Gln Leu Gln |     |             |
|                                                                 | 420 | 425 430     |
| Val Leu His Gln Val Arg Asp Ser Val Ala Ser Met His Arg Asp Val |     |             |
|                                                                 | 435 | 440 445     |
| Ser Asn Asn Gln Pro Gln Arg Thr Gly Cys Ala Thr Ser Cys Leu Ser |     |             |
|                                                                 | 450 | 455 460     |
| Thr Thr His Phe Leu Leu Phe Ala Thr Leu Gln Leu Ala Val Thr Leu |     |             |
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| Gly Tyr Leu Val Tyr Arg Ser Ser Lys Glu Ala Ala Ala Lys Lys Phe |     |             |
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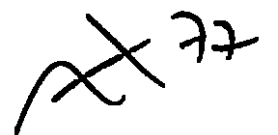
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<210> 17  
 <211> 2475  
 <212> ADN  
 <213> Ixodes scapularis

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 <222> (1342)..(1342)  
 <223> n es a, c, g, or t

<220>  
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 <223> n es a, c, g, or t

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<210> 18  
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 <213> Ixodes scapularis

<220>  
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 <222> (438)..(438)  
 <223> Xaa puede ser cualquier aminoácido que ocurra naturalmente

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Thr Ser Lys Arg Thr Ala Gly Pro Thr Ile Ser Lys Gln Thr Glu Asp  
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Ser Asp Asp Glu Gly Ser Ser Ser Ala Tyr Ser Asp Leu Glu Asp Ser  
35 40 45

Glu Gly Ala Asp Ser Ser Asp Ser Asn Asp Leu Ser Asp Thr Glu Ala  
50 55 60

78

Ser Glu Asp Asp Tyr Asp Asp Ser Gln Asp Glu Glu Asn Thr Lys Ile  
65 70 75 80

Thr Leu Thr Gly Val Glu Gly Lys Asp Leu Glu Leu Arg Gly Lys Asp  
85 90 95

Gln Glu Ala Pro Val Glu Ser Gly Lys Arg Ser Ala Trp His Arg Gln  
100 105 110

Gln Glu Asp Ala Lys Glu Asp Arg Arg Thr Gln Val Val Glu Asp Glu  
115 120 125

Tyr Ala Phe Asp Ser Ser Asp Glu Glu Asp Val Arg Asn Thr Val Gly  
130 135 140

Asn Ile Pro Leu Glu Trp Tyr Glu His Tyr Pro His Ile Gly Tyr Asp  
145 150 155 160

Leu Glu Gly Lys Pro Ile Leu Lys Pro Pro Arg Val Ser Asp Leu Asp  
165 170 175

Asp Phe Leu Arg Lys Met Asp Asp Pro Asn Tyr Trp Arg Thr Val Lys  
180 185 190

Asp Lys Ser Thr Gly Gln Asp Val Val Leu Thr Asp Glu Asp Val Asp  
195 200 205

Leu Ile Gln Arg Leu Gln Lys Gly Gln Phe Pro Ser Ser Thr Thr Asp  
210 215 220

Pro Tyr Glu Pro Phe Glu Asp Ile Phe Ser His Glu Thr Met Ile His  
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Ile Glu Lys Ala Met Val Ser Lys Met Val His Ala Ile Lys Met Gly  
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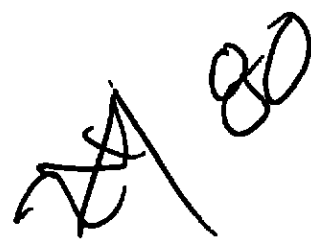
Trp Ile Lys Pro Arg Val Lys Lys His Asp Pro Glu Arg Phe Ser Leu  
275 280 285

Leu Trp Asp Lys Asp Asp Ser Thr Ala Gly Ser Asn Glu Arg Met Gln  
290 295 300

Arg His Ile Pro Ala Pro Lys Met Lys Leu Pro Gly His Glu Glu Ser  
305 310 315 320

Tyr Asn Pro Pro Ala Glu Tyr Leu Phe Thr Glu Glu Glu Glu Ala Lys

| 325 |     |     |     |     |     |     |     |     |     | 330 |     |     |     |     | 335 |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Trp | Arg | Glu | Gln | Glu | Pro | Glu | Glu | Arg | Arg | Ile | Asn | Phe | Leu | Pro | Ala |  |  |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |  |  |
| Lys | Tyr | Pro | Cys | Leu | Arg | Ala | Val | Pro | Ala | Tyr | Glu | Arg | Phe | Ile | Glu |  |  |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |  |  |
| Glu | Arg | Phe | Glu | Arg | Cys | Leu | Asp | Leu | Tyr | Leu | Cys | Pro | Arg | Gln | Arg |  |  |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |  |  |
| Lys | Met | Arg | Val | Asn | Val | Asp | Ala | Glu | Asp | Leu | Ile | Pro | Gln | Leu | Pro |  |  |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |  |  |
| Lys | Pro | Lys | Asp | Leu | Gln | Pro | Phe | Pro | Ser | Ile | Gln | Ser | Ile | Val | Tyr |  |  |  |  |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |  |  |
| Glu | Gly | His | Thr | Asp | Cys | Val | Leu | Cys | Leu | Ser | Leu | Glu | Pro | Ala | Gly |  |  |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |  |  |
| Gln | Phe | Phe | Ala | Ser | Xaa | Ser | Glu | Asp | Gly | Thr | Val | Arg | Ile | Trp | Glu |  |  |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |  |  |
| Leu | Leu | Thr | Gly | Xaa | Cys | Leu | Lys | Lys | Phe | Gln | Phe | Glu | Ala | Pro | Val |  |  |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |  |  |
| Lys | Ser | Val | Ala | Trp | Cys | Pro | Val | Val | Val | Pro | Met | Lys | Leu | Cys | Val |  |  |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     | 480 |     |  |  |  |  |
| Asp | Lys | Thr | Val | Ser | Met | Leu | Asp | Ala | Gly | Val | Thr | Asp | Lys | Leu | Leu |  |  |  |  |
|     |     |     | 485 |     |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |  |  |
| Pro | Phe | Thr | Thr | Gly | His | Arg | Val | Val | Cys | Pro | Pro | Arg | Arg | Val | Leu |  |  |  |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |  |  |
| Gly | Pro | Gly | Gly | Gly | Ser | Gly | Val | Gly | Ala | Asp | Val | Gly | Leu | Leu | Ser |  |  |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |  |  |
| Arg | Val | Pro | Leu | Pro | Gly | Gly | Ala | Ser | Ala | Gly | Arg | Ser | Pro | Pro | Arg |  |  |  |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |  |  |
| Cys | Gly | Ala | Gly | Asp | Val | Ala | Leu | Glu | Gly | Arg | Leu | Leu | Cys | His | Cys |  |  |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     | 560 |     |  |  |  |  |
| His | Gly | Arg | Gly | Thr | Gly | His | Arg | Ala | Cys | Pro | Ser | Val | Val | His | Ala |  |  |  |  |
|     |     |     | 565 |     |     |     |     |     | 570 |     |     |     |     | 575 |     |  |  |  |  |
| Ala | Val | Arg | Arg | Leu | Pro | Phe | Ser | Lys | Ala | Lys | Gly | Gly | Val | Ser | Arg |  |  |  |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |  |  |  |



Val Leu Phe His Pro Leu Arg Pro Phe Leu Leu Val Ala Cys Gln Arg  
595 600 605

Thr Val Arg Val Tyr His Leu Leu Lys Gln Glu Leu Ala Lys Arg Leu  
610 615 620

Thr Ser Asn Cys Lys Trp Ile Ser Cys Met Gly Arg Pro Pro Pro Gly  
625 630 635 640

Asp Asn Leu Leu Ile Gly Thr Tyr Glu Lys Arg Leu Met Trp Phe Asp  
645 650 655

Leu Asp Leu Ser Thr Lys Pro Tyr Gln Gln Leu Arg Ile His Asn Ala  
660 665 670

Ala Ile Arg Ser Val Ala Phe His Pro Arg Tyr Pro Leu Phe Ala Ser  
675 680 685

Ala Gly Asp Asp Arg Ser Val Ile Val Ser His Gly Met Val Tyr Asn  
690 695 700

Asp Leu Leu Gln Asn Pro Leu Ile Val Pro Leu Arg Arg Leu Lys Asn  
705 710 715 720

His Ala Ile Ser Lys Gly Met Gly Val Leu Asp Cys Ala Phe His Pro  
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Phe Thr

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cgaatcggaa gtacccgcgg ctcaaggacg tggacgacgt gctcggcggt gcagccgcct 180  
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Asn Ile Lys Ala Lys Met Ser Asn Arg Lys Tyr Pro Arg Leu Lys Asp  
 35 40 45

Val Asp Asp Val Leu Gly Gly Ala Ala Ala Trp Glu Asn Val Asp Ser  
 50 55 60

Thr Glu Glu Lys Cys Pro Lys Cys Gly His Glu Arg Ala Tyr Phe Met  
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Gln Ile Gln Thr Arg Ser Ala Asp Glu Pro Met Thr Thr Phe Tyr Lys  
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Cys Cys Asn Gln Leu Cys Gly His Gln Trp Arg Asp  
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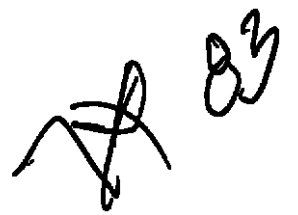
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 ccgcaacatt gtctggattg ccgaatgcgt tgctcagcgt catcggtcca agatcgataa 180  
 ctacattcca atcttctagt cgctcgagga aaagaaatgg gccaatccg tagtttgtcg 240  
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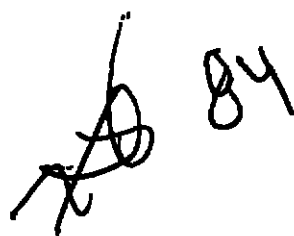
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 cagaacaacc tctcgacctg ctacaagttc caccttccgg acttgaaggt gggtagcgtg 240  
 gatcagttgg ttggcctctc ggatgacttg ggaaagctcg acacctatgt cgaaagcatc 300  
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7

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 aagggccgcc tggtcacgga gcaaaggctc aagatcatcg actactacac ccgtcgagag 180  
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 acaagggcac accaaatcaa cccttcaccc ttcggtgaag tgccaccgaa attaaacttca 180  
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08

&lt;400&gt; 27

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Ser Pro Asn Gly Arg Ser Pro Lys Arg Arg Arg Cys Met Pro Leu Ser  
20 25 30

Val Thr Gln Ala Ala Thr Pro Pro Thr Arg Ala His Gln Ile Asn Pro  
35 40 45

Ser Pro Phe Gly Glu Val Pro Pro Lys Leu Thr Ser Glu Glu Ile Ala  
50 55 60

Ala Asn Ile Arg Glu Glu  
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&lt;211&gt; 490

&lt;212&gt; ADN

&lt;213&gt; Amblyomma americanum

&lt;400&gt; 28

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caagtgggac tcatctgtga gcgcatgatg aaagagcgag agagccagat acgagaggag 420  
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tacgaccaaa 490

&lt;210&gt; 29

&lt;211&gt; 163

&lt;212&gt; PRT

&lt;213&gt; Amblyomma americanum

&lt;400&gt; 29

Met Ala Cys Ala Thr Leu Lys Arg Thr His Asp Trp Asp Pro Leu His  
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Ser Pro Asn Gly Arg Ser Pro Lys Arg Arg Arg Cys Met Pro Phe Ser  
20 25 30

Val Asn Pro Pro Ala Pro Pro Thr Arg Ala His Gln Ile Asn Pro Ser  
35 40 45

GA

A

Pro Phe Gly Asp Val Pro Pro Lys Leu Thr Ser Glu Glu Ile Ala Ala  
50 55 60

Asn Ile Arg Glu Glu Met Arg Arg Leu Gln Arg Arg Lys Gln Leu Cys  
65 70 75 80

Phe Gln Gly Ala Glu Cys Ser Ser Pro Pro Glu Gly Cys Ser Pro Ile  
85 90 95

Gly Ser Pro Ser Gln His Thr Gly Gly Leu Leu Ser Pro Val Arg Arg  
100 105 110

Asp Gln Pro Leu Phe Thr Phe Arg Gln Val Gly Leu Ile Cys Glu Arg  
115 120 125

Met Met Lys Glu Arg Glu Ser Gln Ile Arg Glu Glu Tyr Asp His Val  
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Leu Ser Thr Lys Leu Ala Glu Gln Tyr Asp Thr Phe Val Lys Phe Thr  
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Tyr Asp Gln

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ttcacgttcc gccaggttgg gctcatttgc gaacgaatga tgaaggagcg agagagcaag 360  
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35 40 45

Val Pro Pro Lys Leu Thr Ser Glu Glu Ile Ala Ala Asn Ile Arg Glu  
50 55 60

Glu Met Arg Arg Leu Gln Arg Arg Lys Gln Leu Cys Phe Gln Gly Ala  
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Asp Pro Glu Ser Gln His Thr Ser Gly Leu Ser Ser Pro Val His Arg  
85 90 95

Asp Gln Pro Leu Phe Thr Phe Arg Gln Val Gly Leu Ile Cys Glu Arg  
100 105 110

Met Met Lys Glu Arg Glu Ser Lys Ile Arg Glu Glu Tyr Asp His Val  
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Leu Ser Thr Lys Leu Ala Glu Gln Tyr Asp Thr Phe Val Lys Phe Thr  
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Tyr Asp Gln  
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gacgcgaat ccagcatac cagtggcttc tcgtcaccgg tgcgtcgaga ccagccctg 300

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Ser Pro Ser Gly Arg Ser Pro Lys Arg Arg Arg Cys Met Pro Leu Ser  
 20 25 30

Pro Pro Pro Thr Arg Ala His Gln Ile Asp Pro Ser Pro Phe Gly Asp  
 35 40 45

Val Pro Pro Lys Leu Thr Ser Glu Glu Ile Ala Ala Asn Ile Arg Glu  
 50 55 60

Glu Met Arg Arg Leu Gln Arg Arg Lys Gln Leu Cys Phe Gln Gly Thr  
 65 70 75 80

Asp Ala Glu Ser Gln His Thr Ser Gly Leu Ser Ser Pro Val Arg Arg  
 85 90 95

Asp Gln Pro Leu Phe Thr Phe Arg Gln Val Gly Leu Ile Cys Glu Arg  
 100 105 110

Met Met Lys Glu Arg Glu Ser Lys Ile Arg Glu Glu Tyr Asp His Val  
 115 120 125

Leu Ser Thr Lys Leu Ala Glu Gln Tyr Asp Thr Phe Val Lys Phe Thr  
 130 135 140

Tyr Asp Gln Ile Gln Lys Arg Phe Glu Gly Ala Thr Pro Ser Tyr Leu  
 145 150 155 160

Ser