

2021/33211

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

DIRECCIÓN DE NUEVAS CREACIONES

E. S. D.

Ref.: Expediente No. **NC2021/0011800**Solicitud de patente de invención a nombre de **PURECIRCLE USA INC.**

1. Yo, CAROLINA DAZA MONTALVO, identificada como aparece al pie de mi firma, domiciliada en la Carrera 11 No. 86-53, piso 3º, obrando como apoderada del aplicante de la patente de invención de la referencia, PURECIRCLE USA INC., en respuesta al Oficio N° 15416 de 29 de septiembre de 2021, atentamente me permito presentar el siguiente documento:

1.1. **Dibujos:** Conforme a lo observado por el examinador y lo dispuesto en el literal d) del artículo 26 de la Decisión 486 de 2000 de la Comisión de la Comunidad Andina, nos permitimos adjuntar los dibujos traducidos.

2. Habiendo dado cumplimiento al requerimiento de ese Despacho, solicito respetuosamente se continúe con el trámite de la presente solicitud.

Señora Directora,

**CAROLINA DAZA MONTALVO**

C.C. 66.783.790 de Palmira Valle

TP-141563 CSJ

notificaciones@clarkemodet.com.co

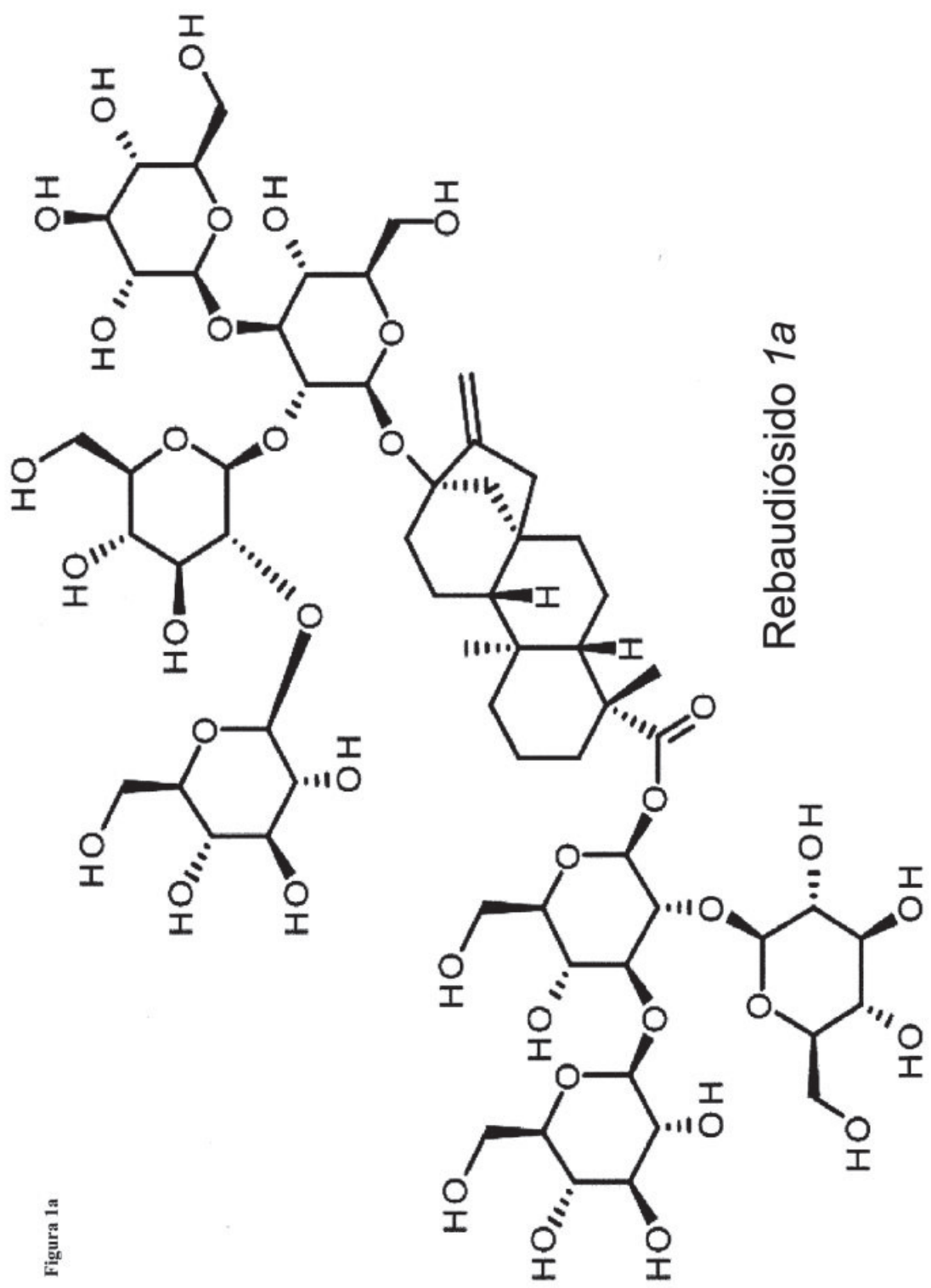


Figura 1a

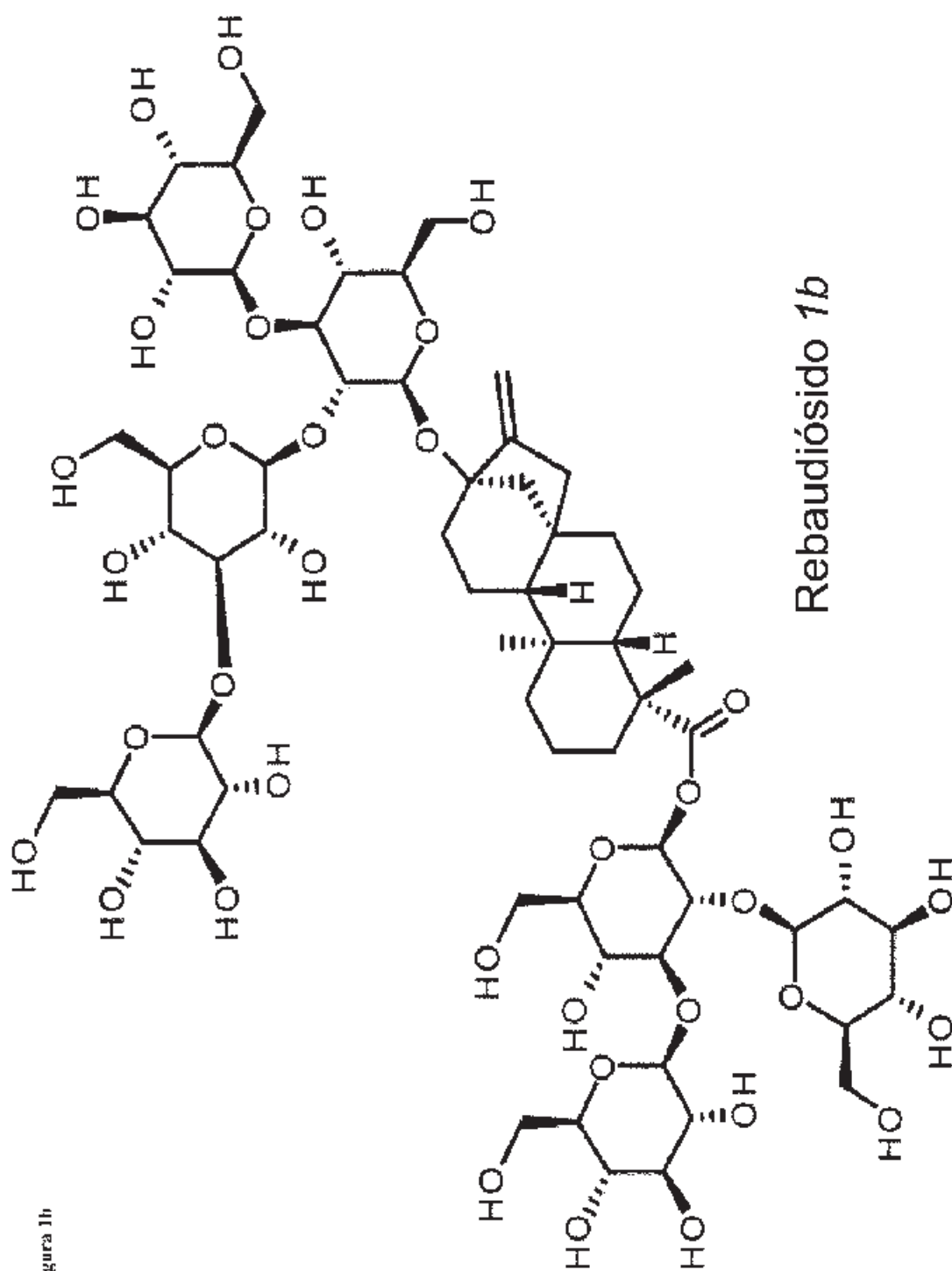
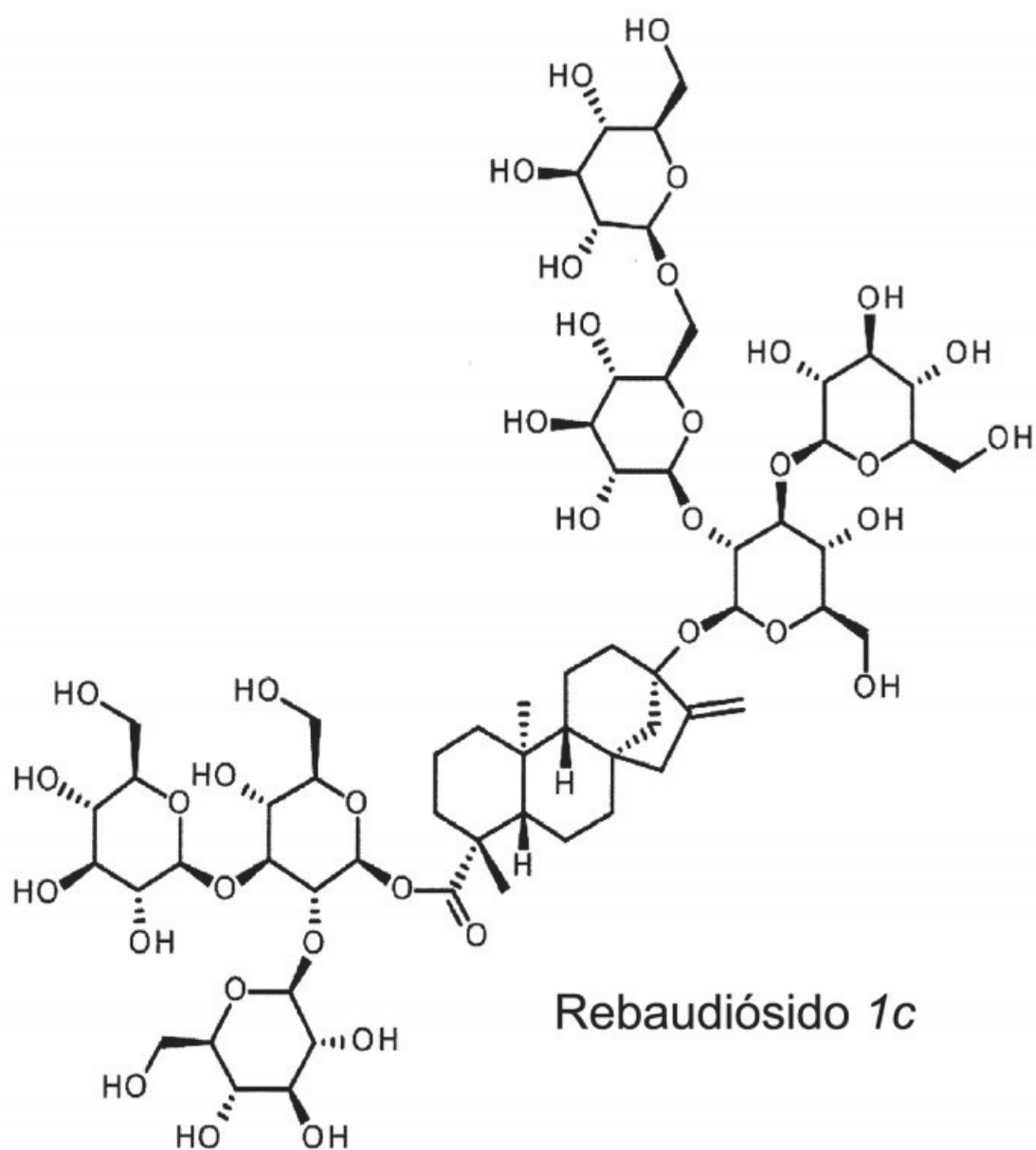


Figura 1b

Figura 1c



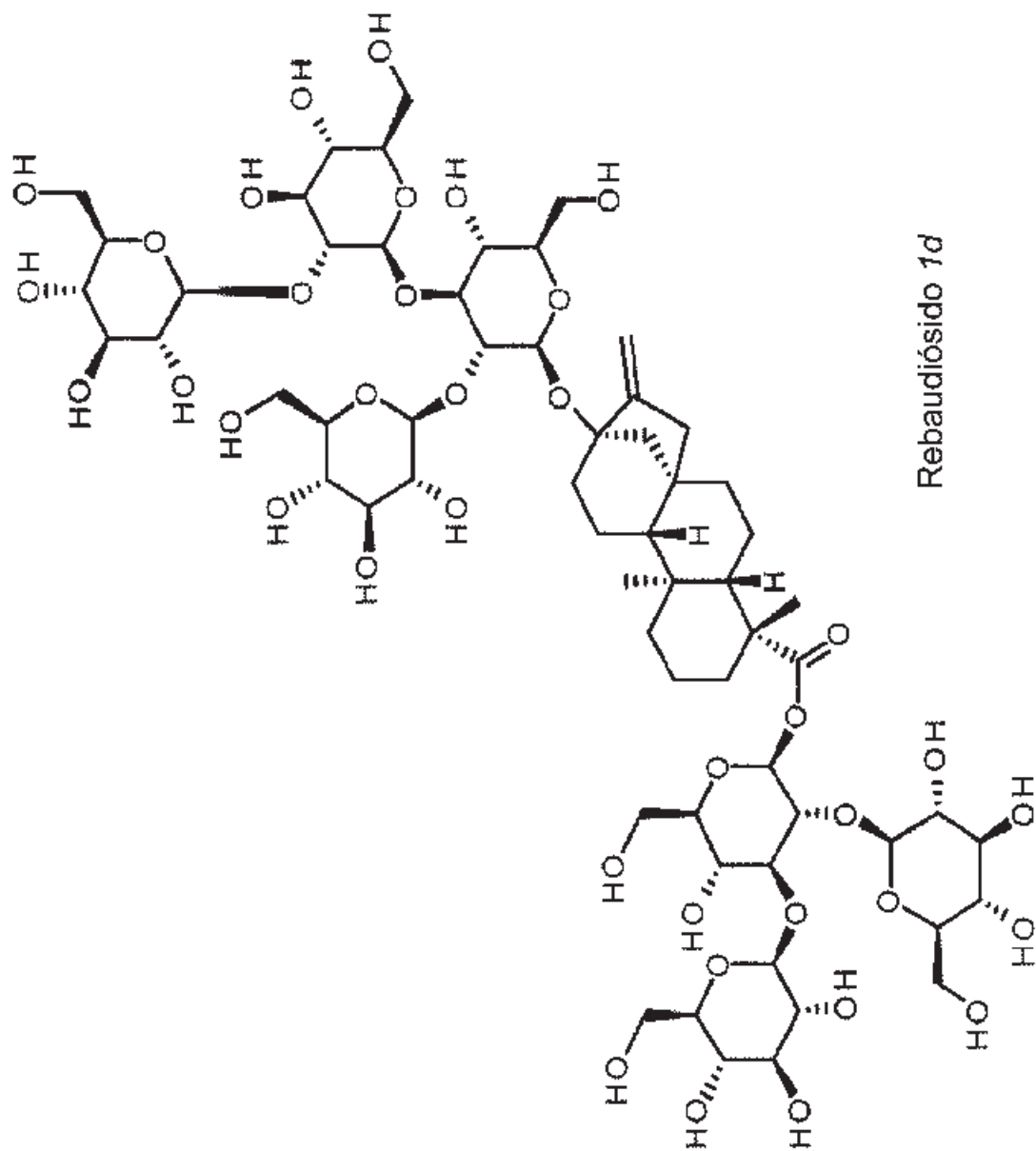


Figura 1d

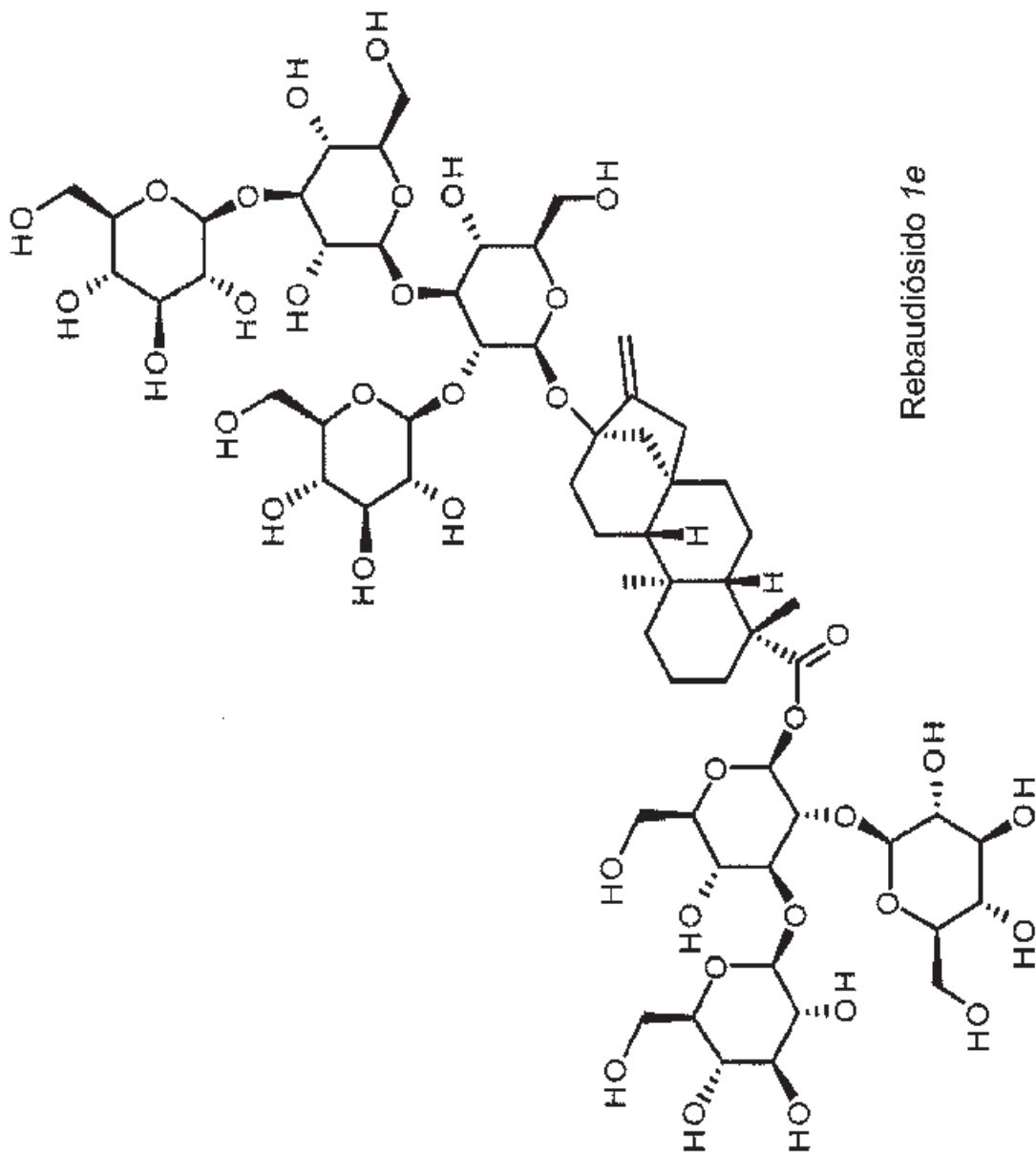


Figura 1e

Rebaudiósido 1f

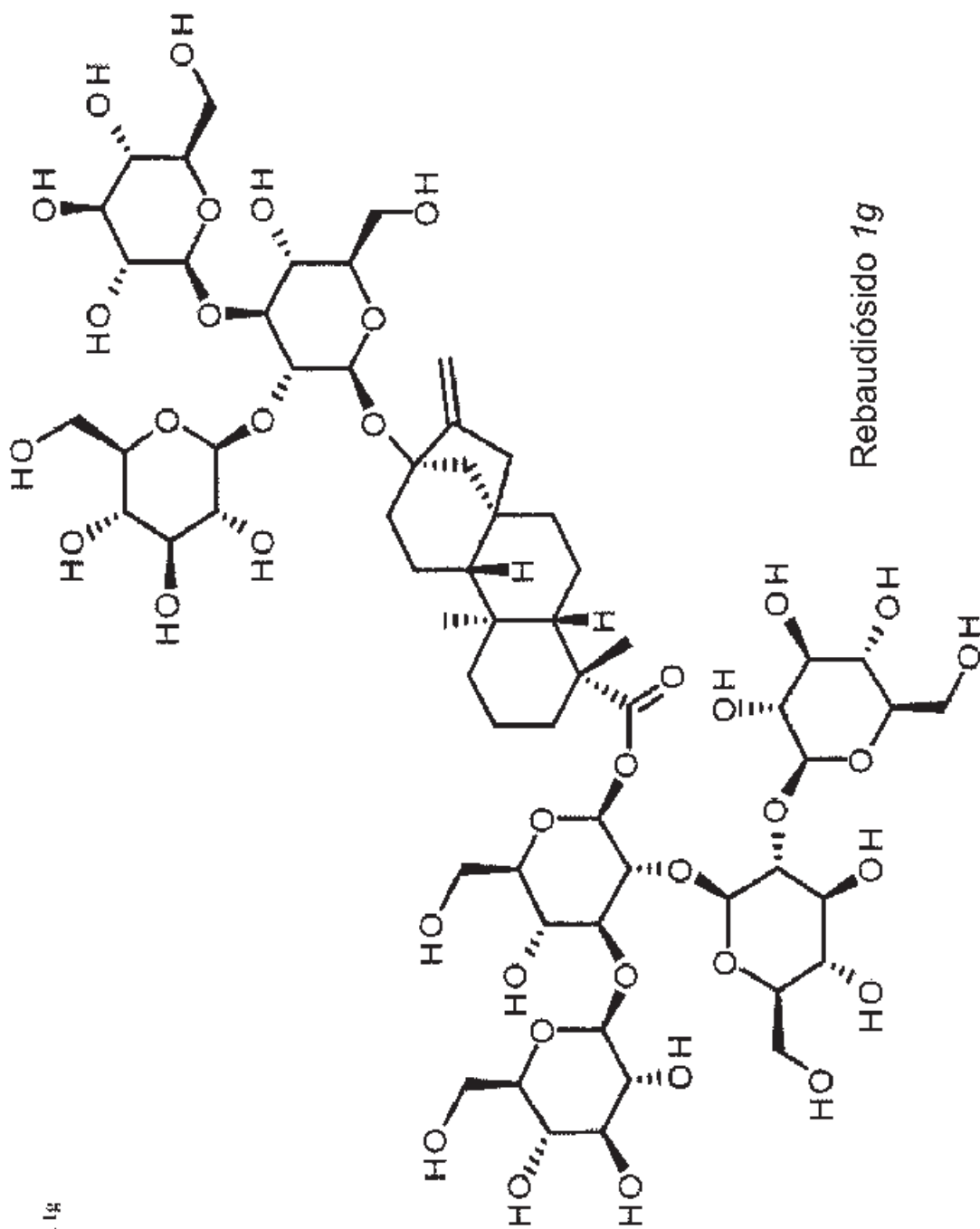


Figura 1g

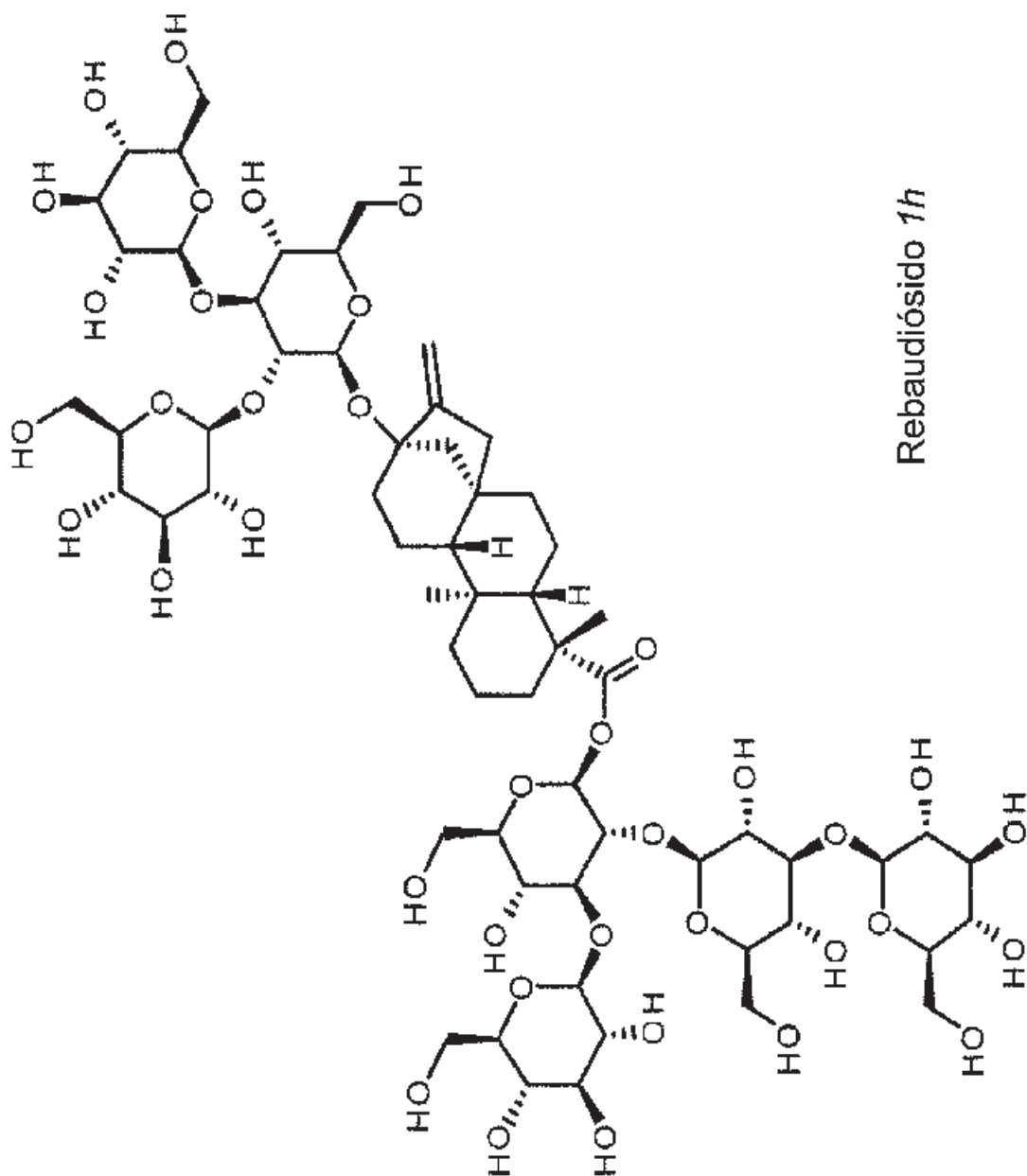


Figura 1h

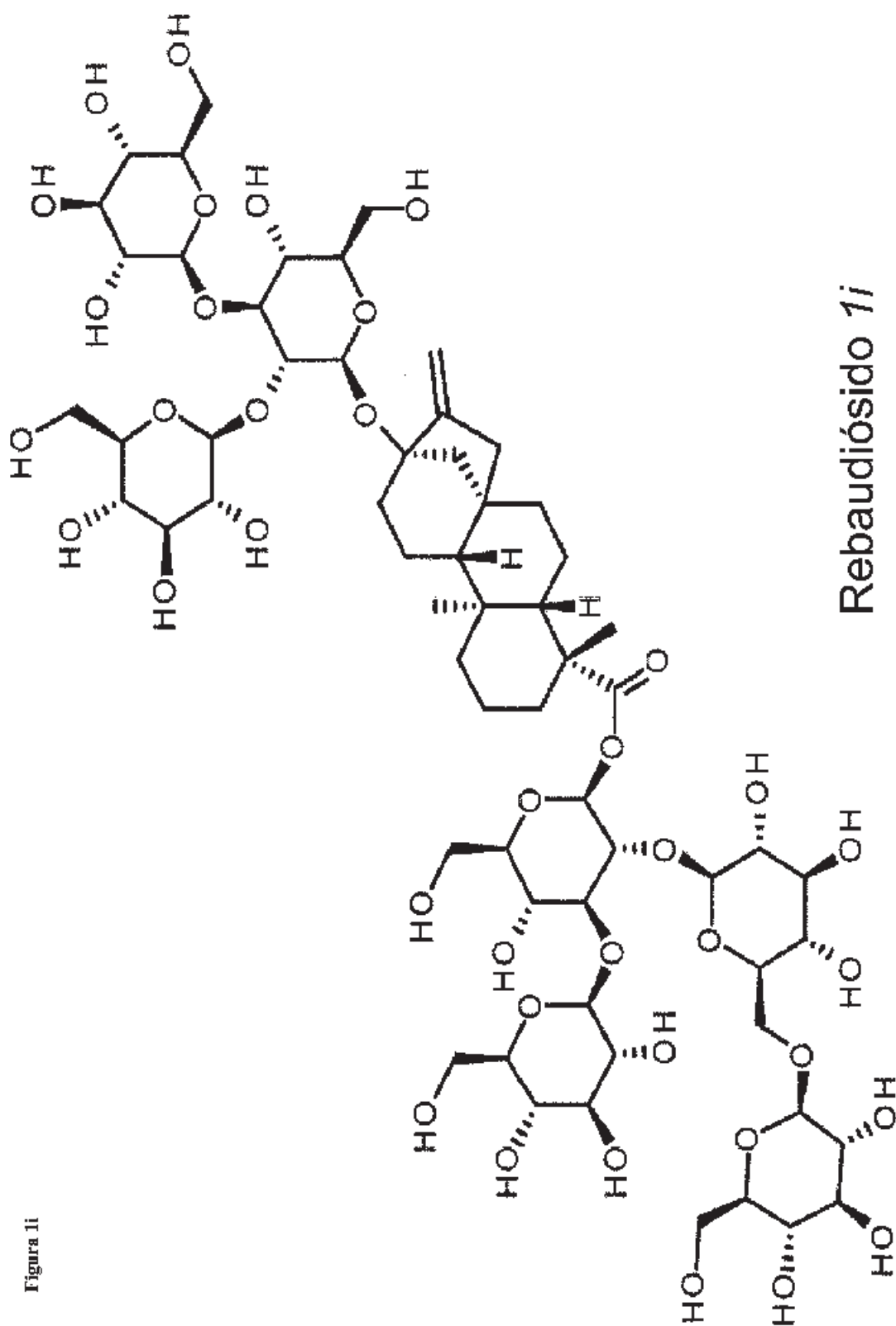


Figure 11

Figura 1j

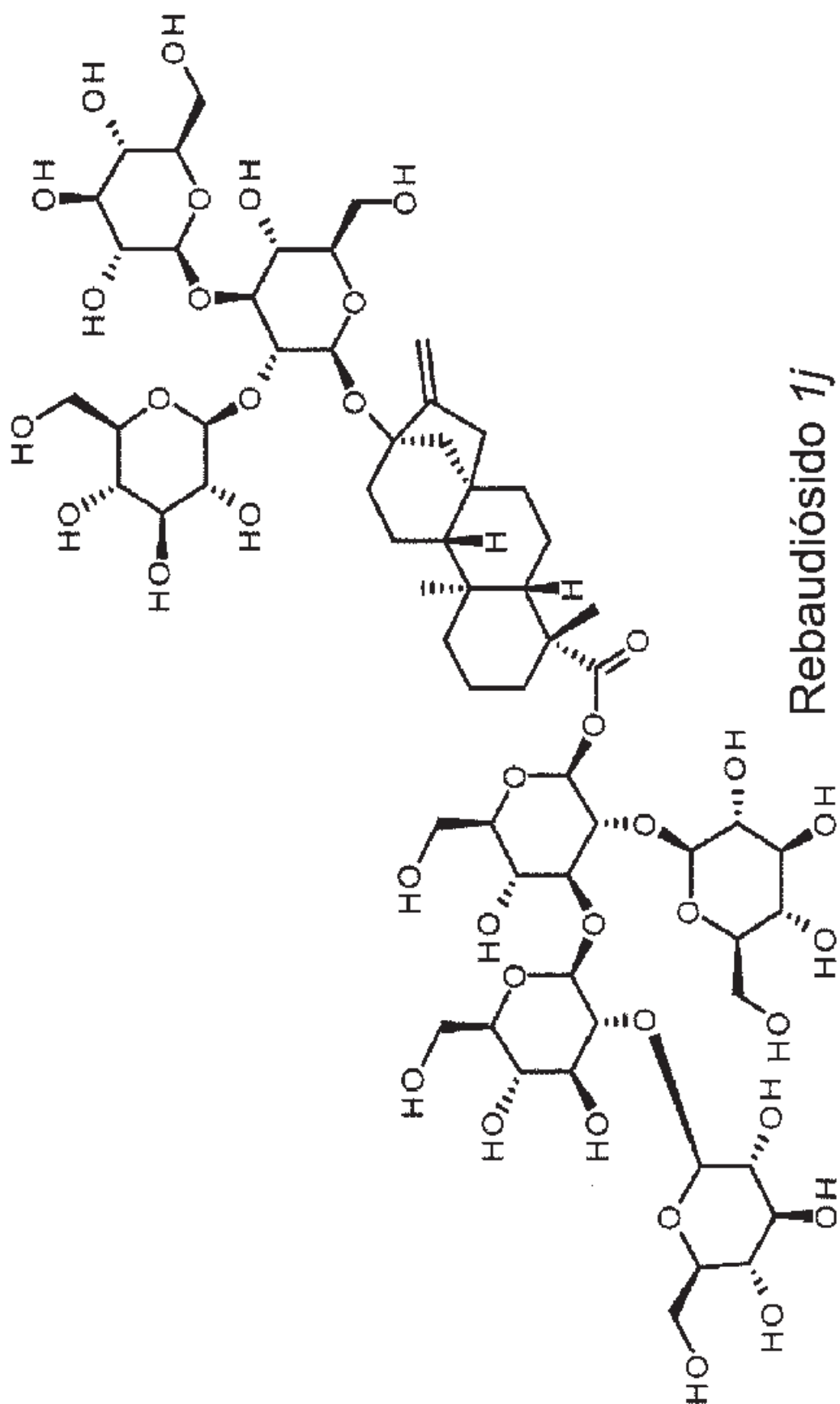
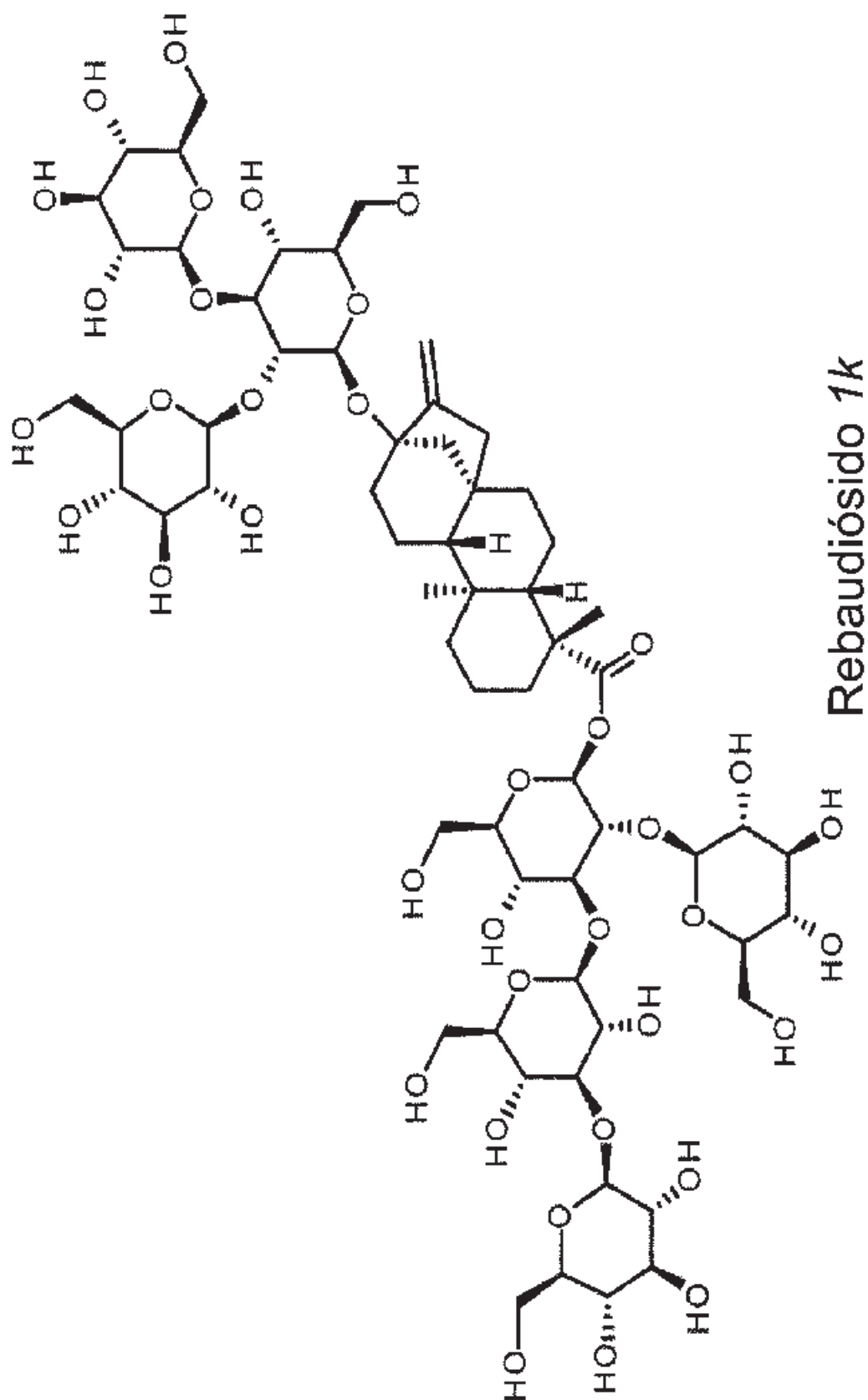


Figura 1k



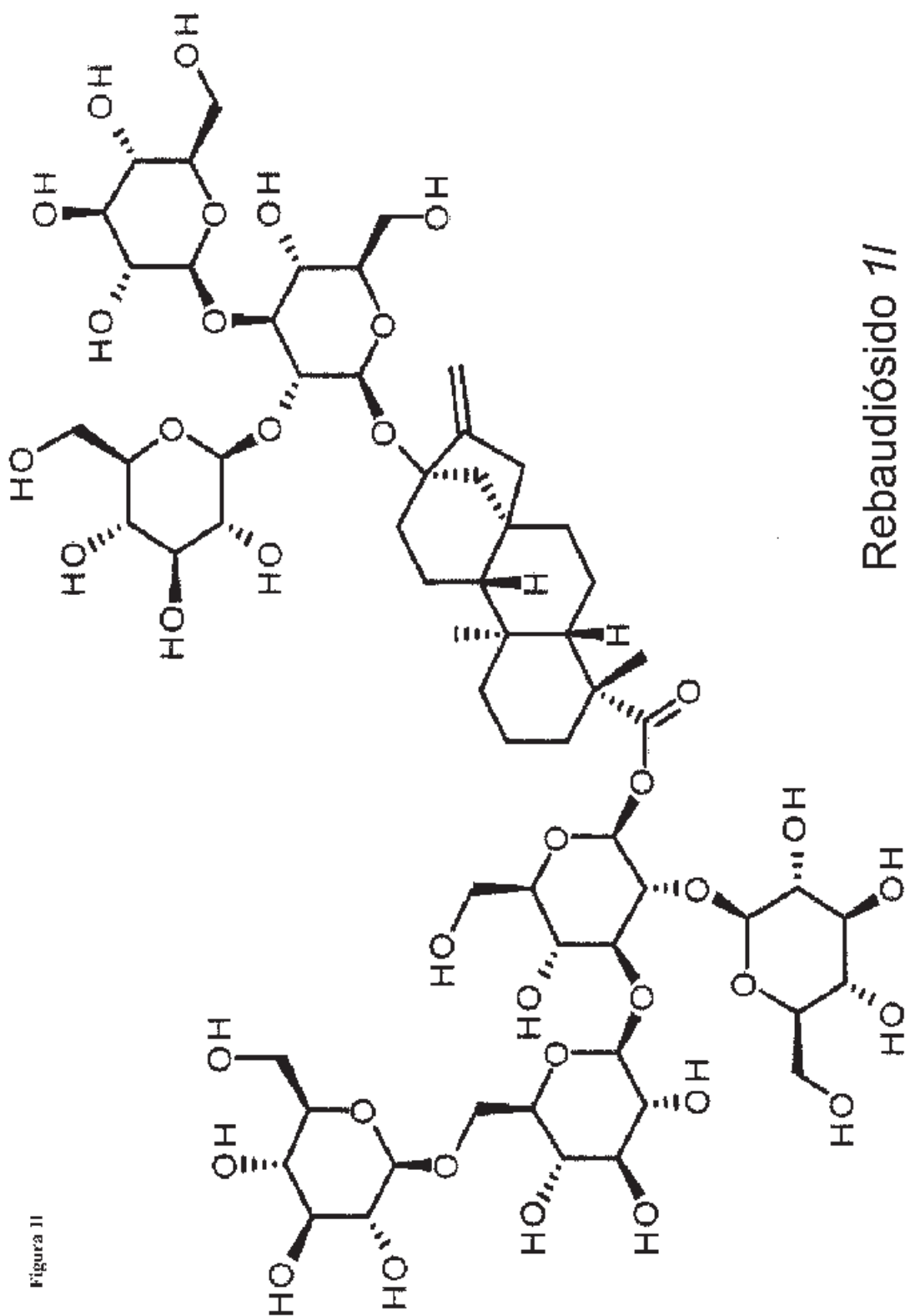


Figura 11

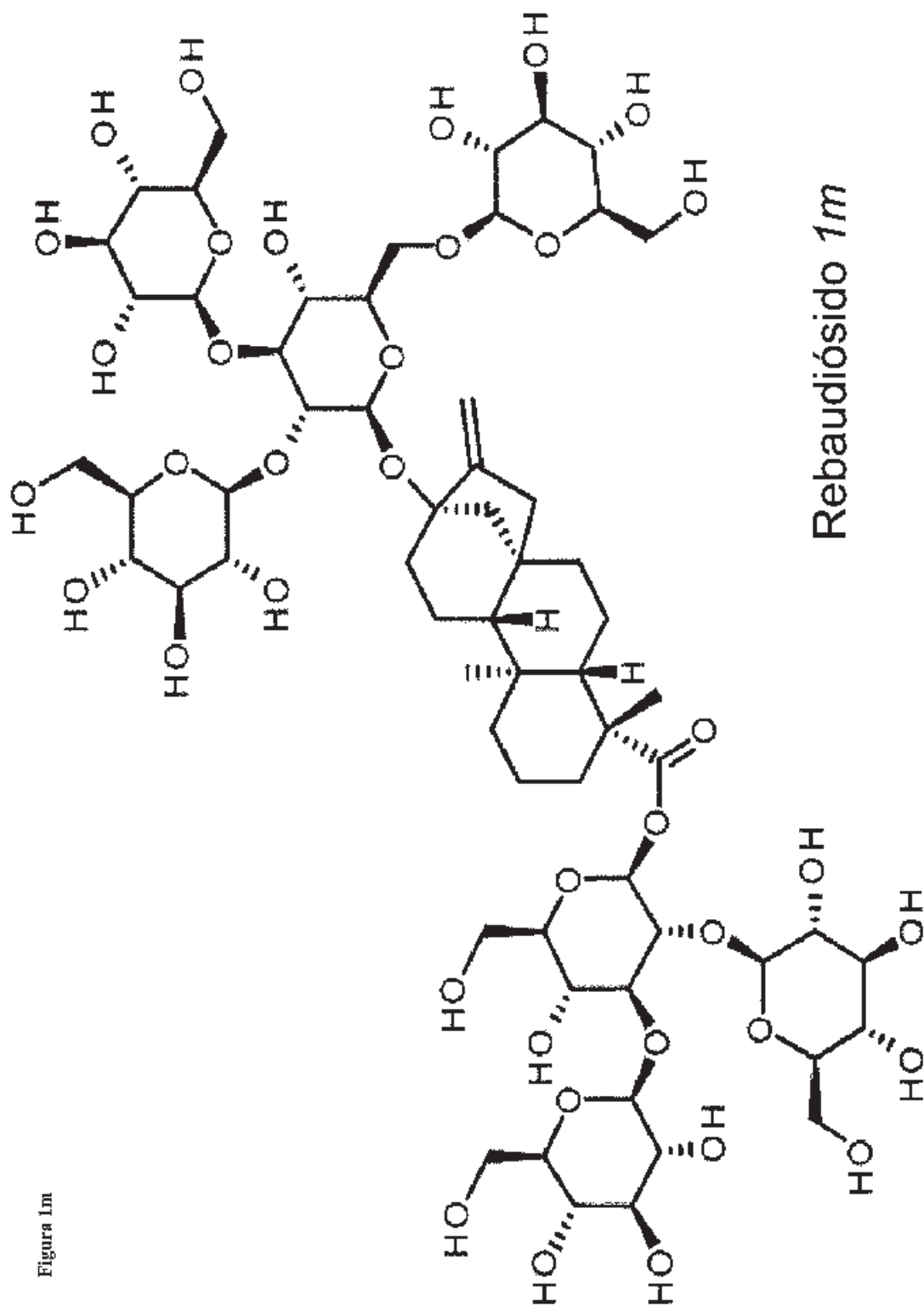


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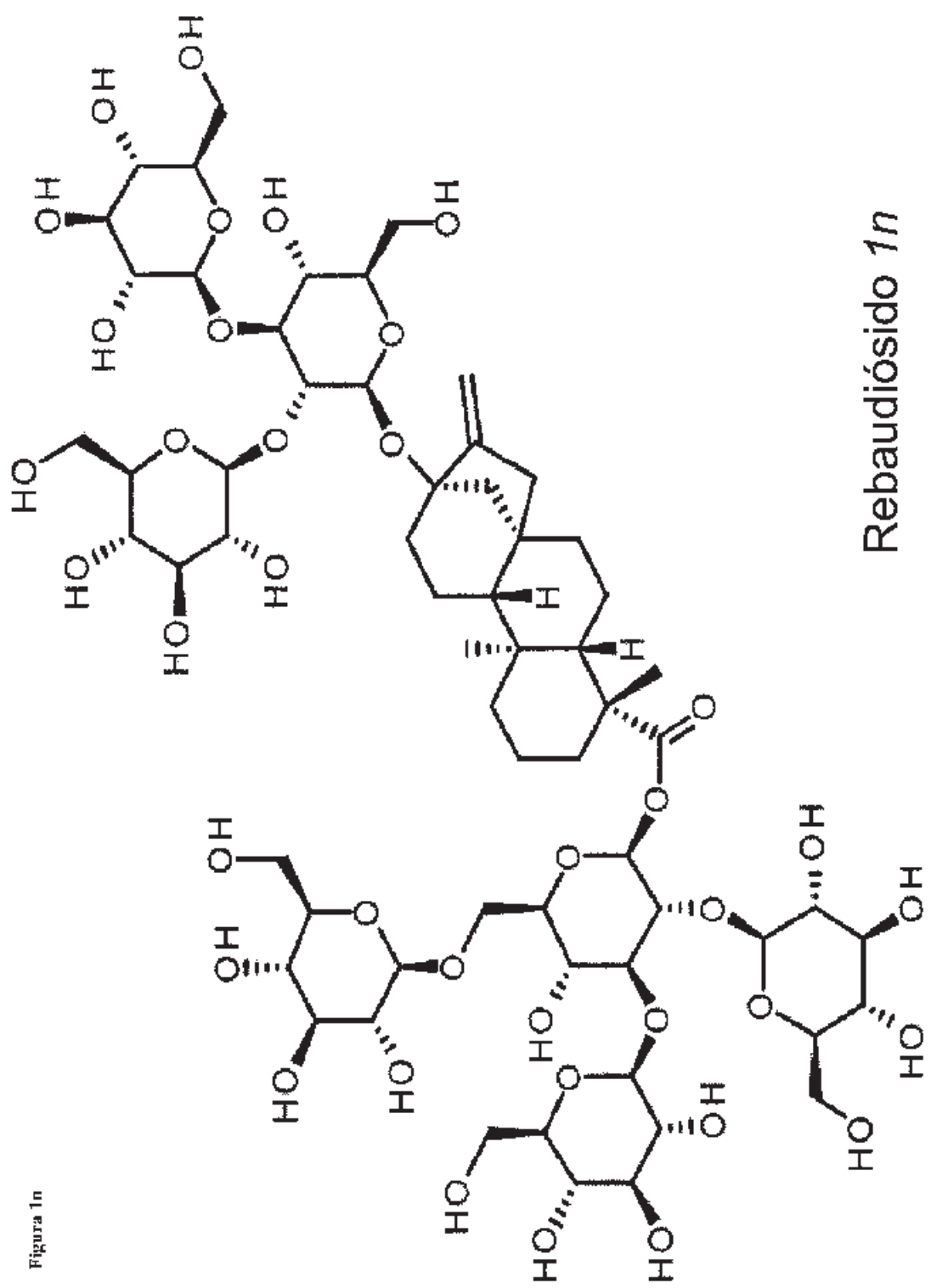


Figura 1n

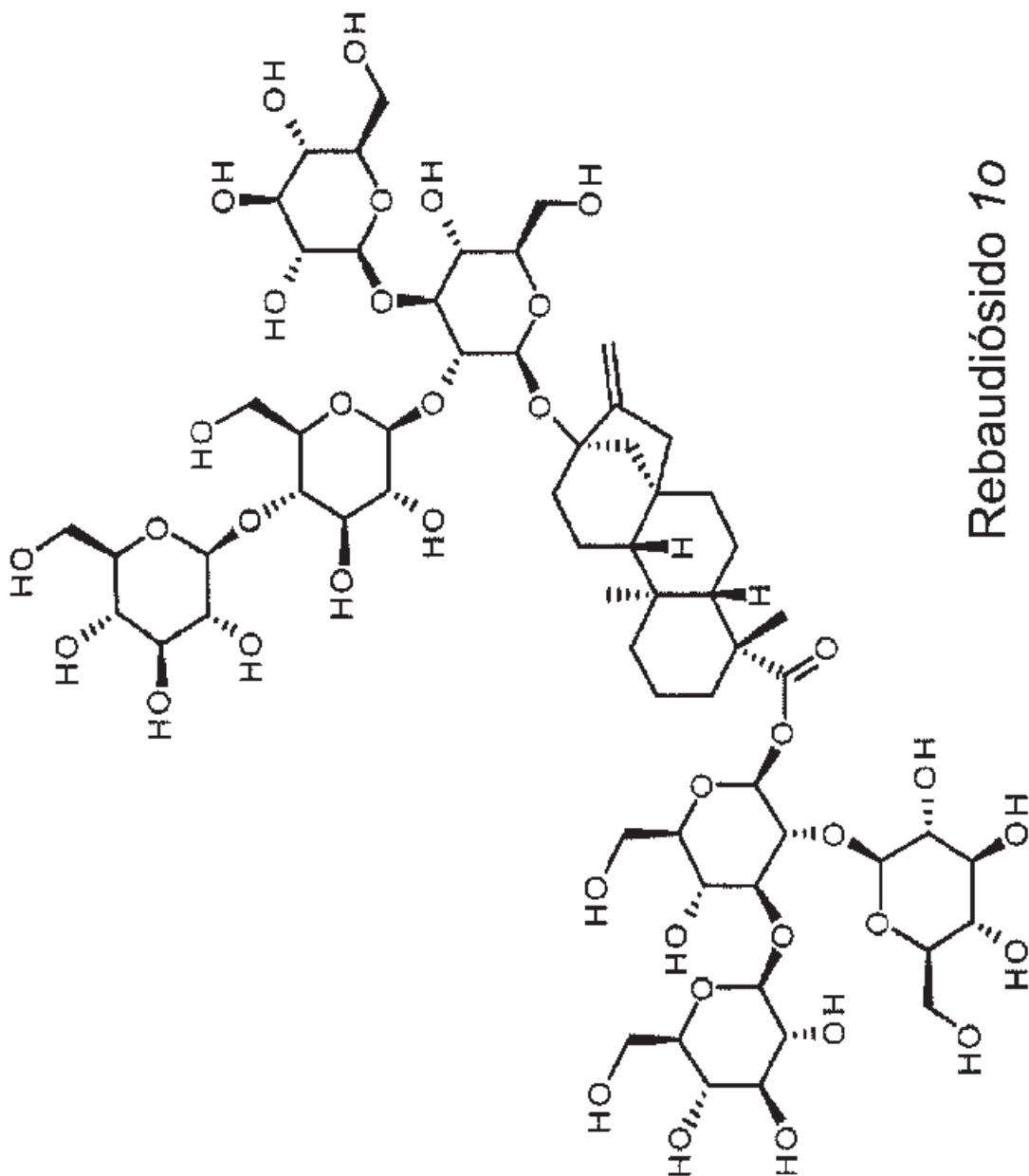


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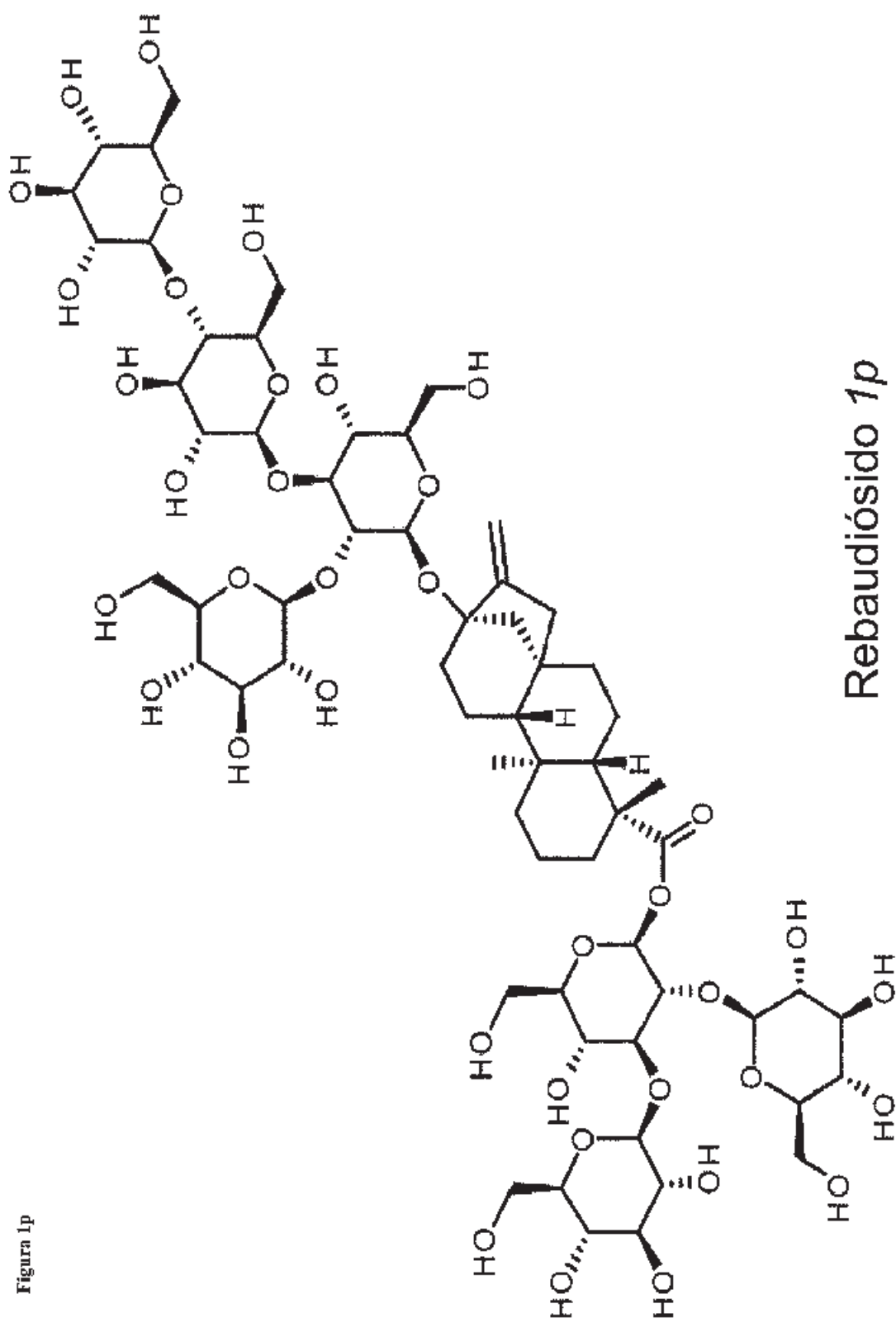


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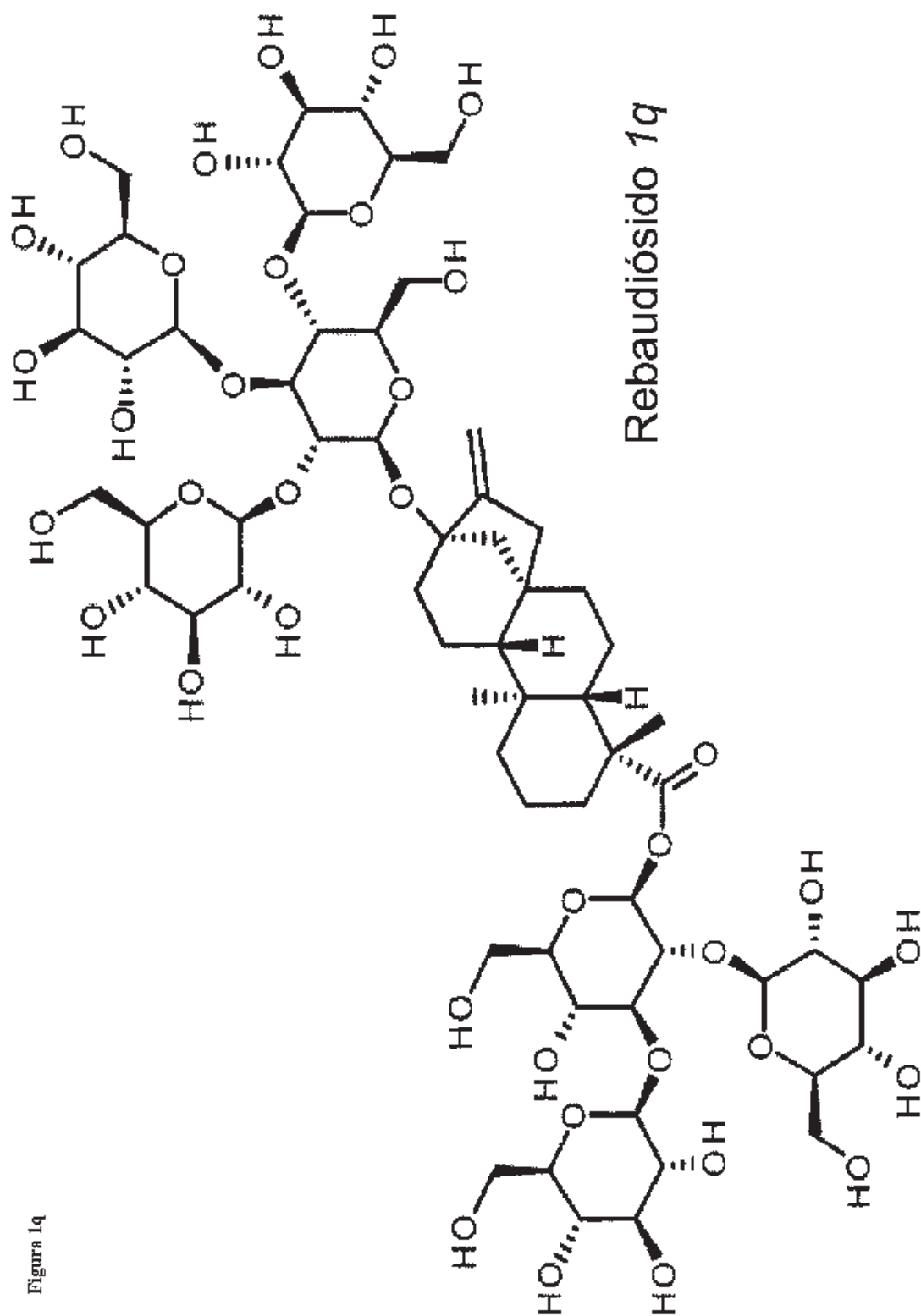
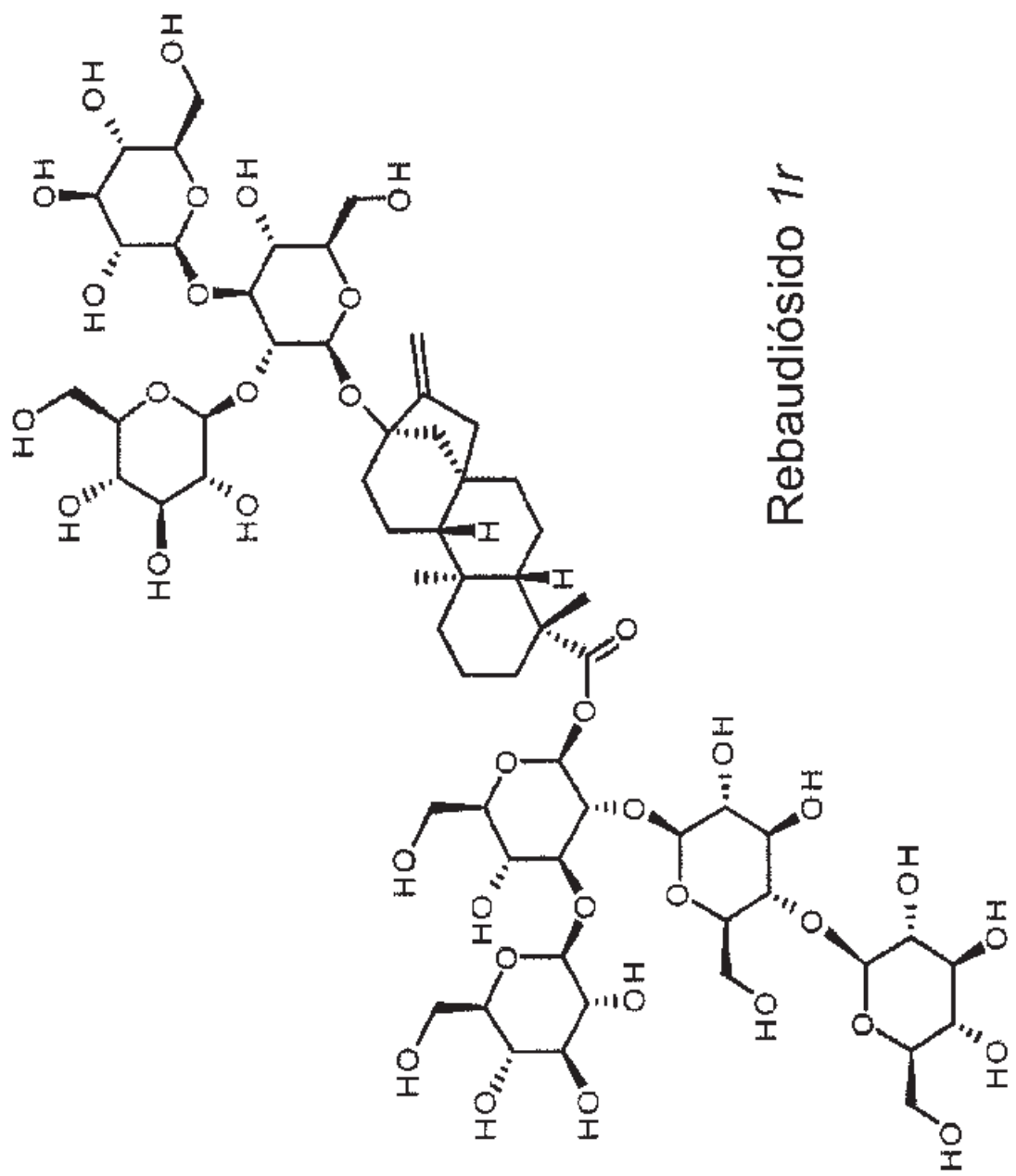


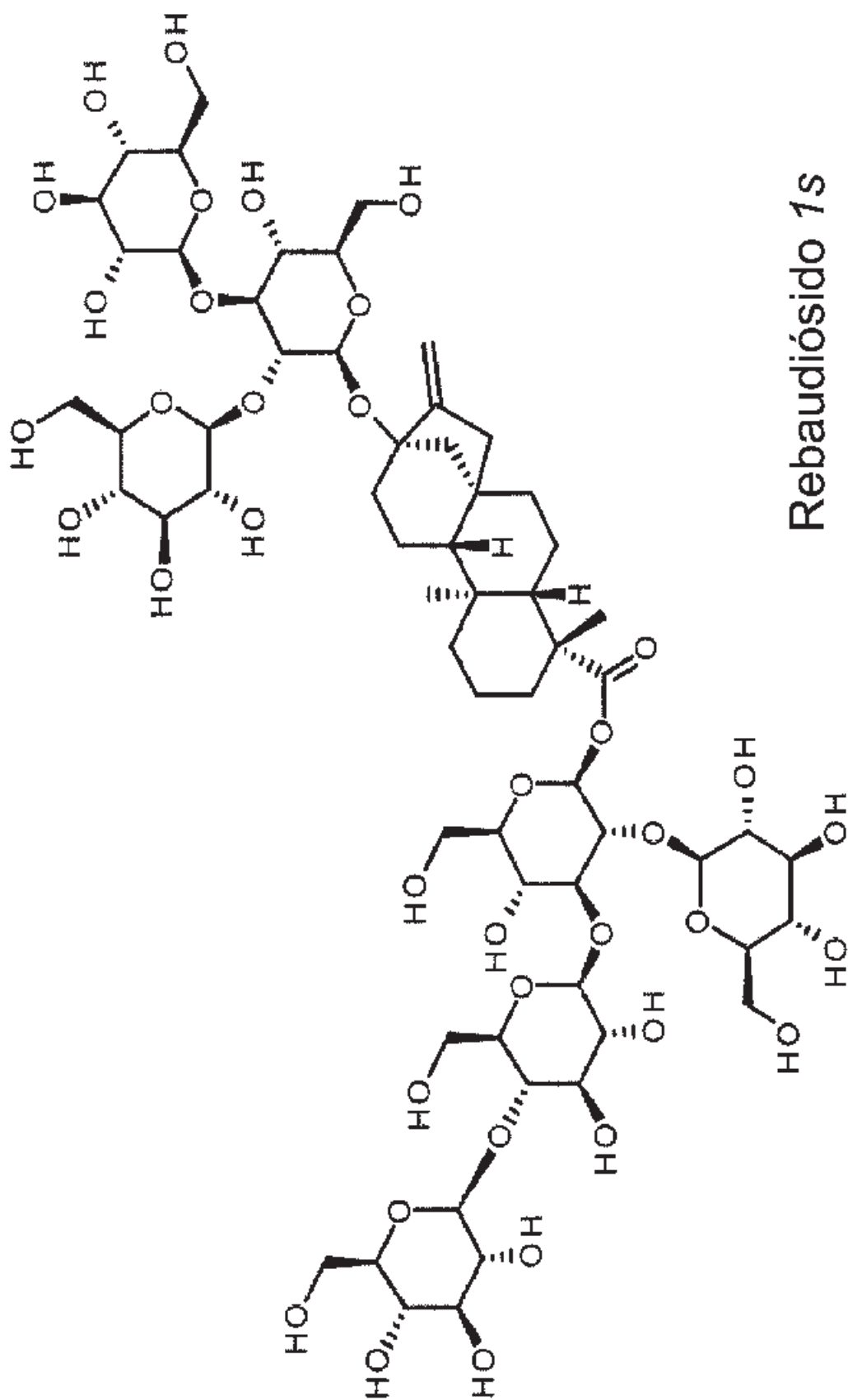
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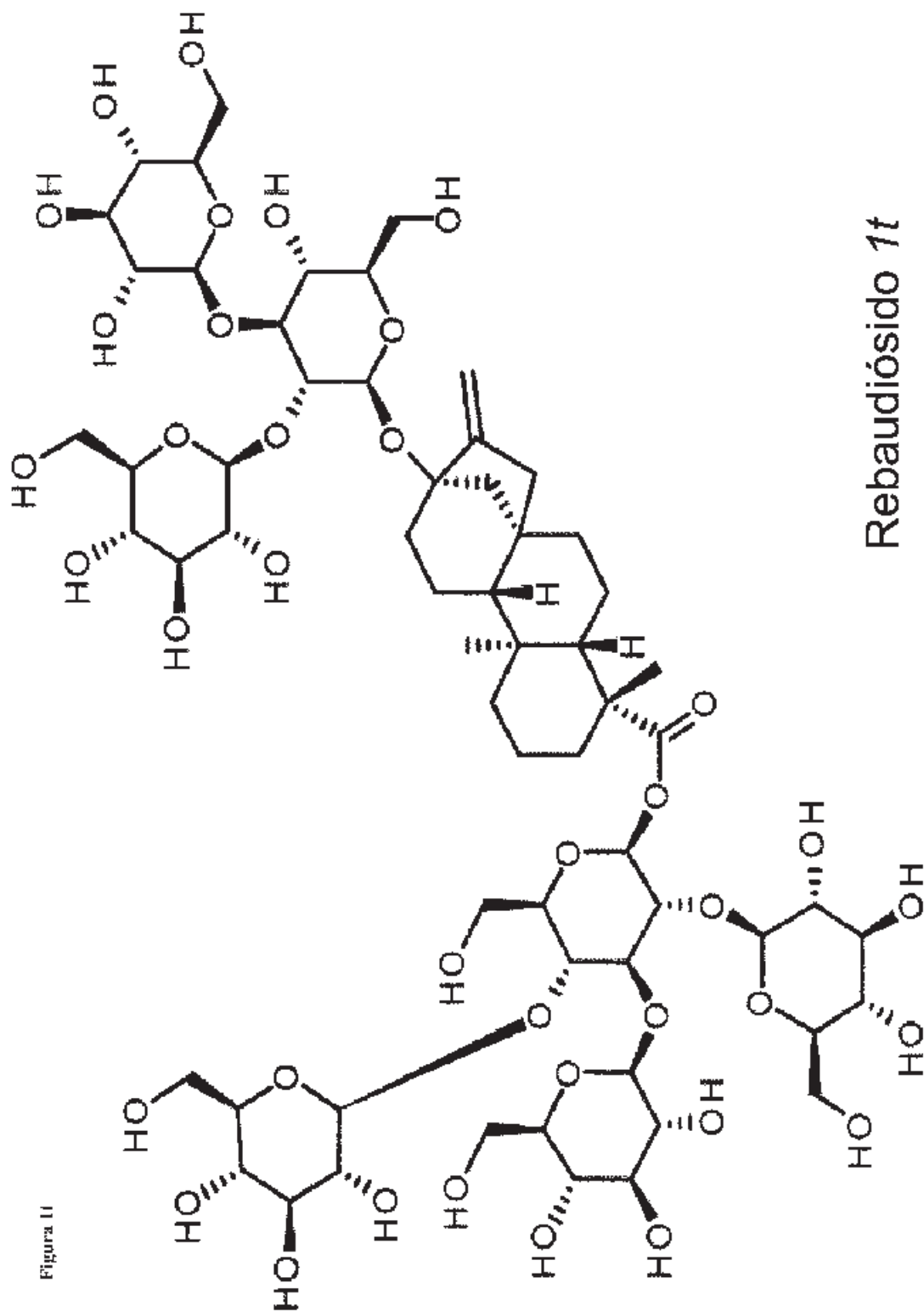


Rebaudiósido 1r

Figura 1r

Figura 1s





11 Family

Rebaudiósido 2a

Figura 2b

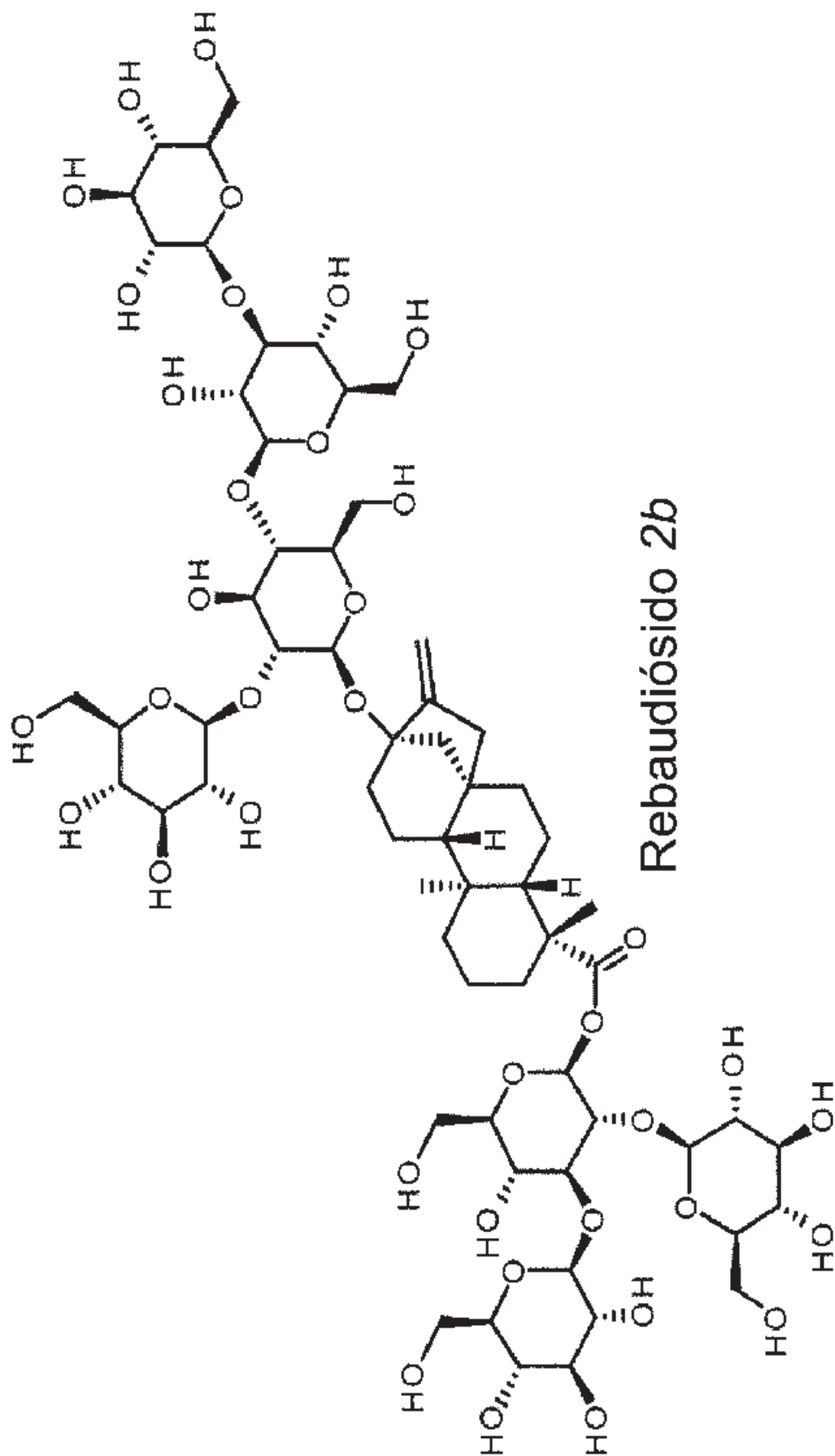


Figura 2c

Rebaudiósido 2c

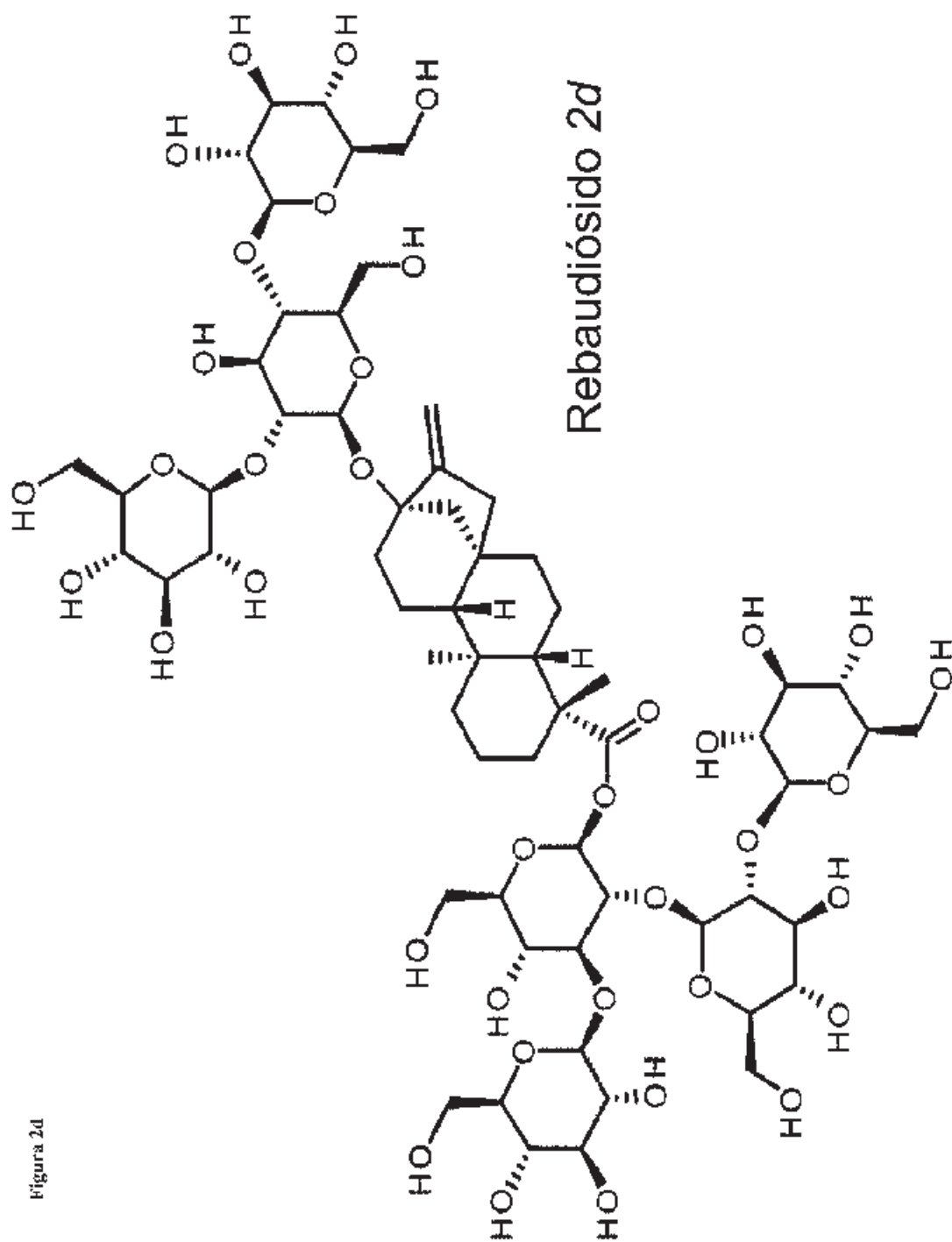


Figura 2d

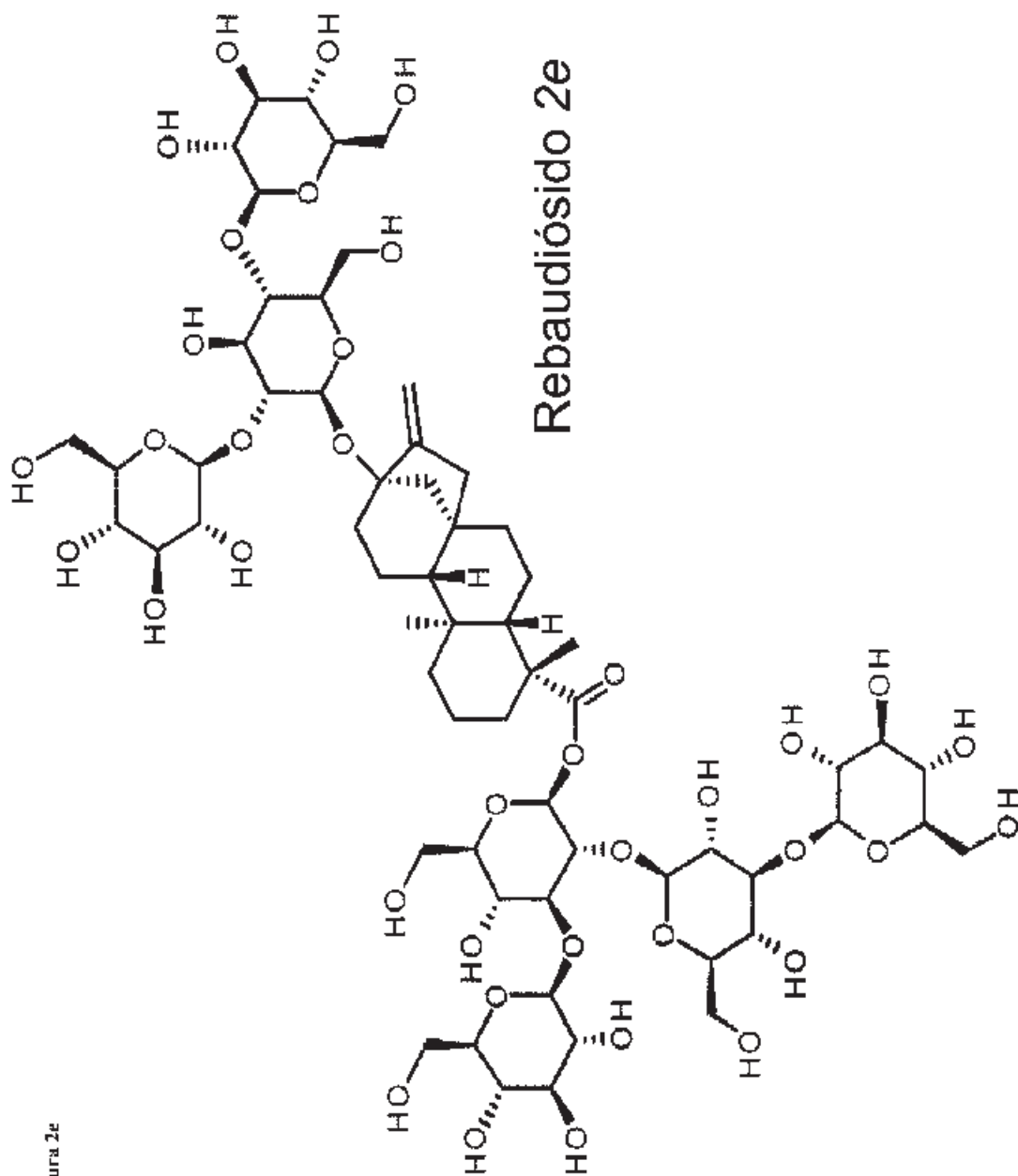


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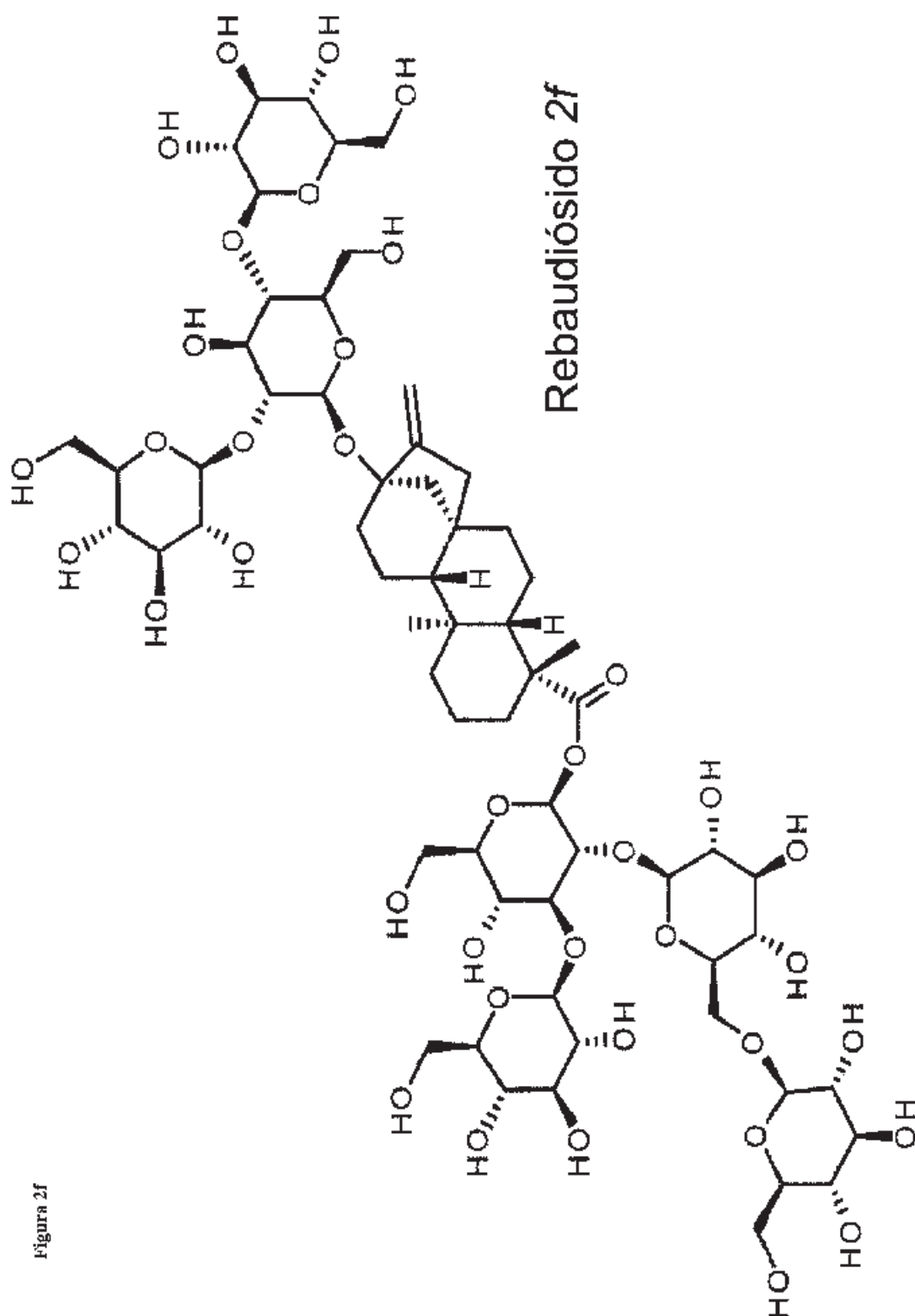


Figura 2f

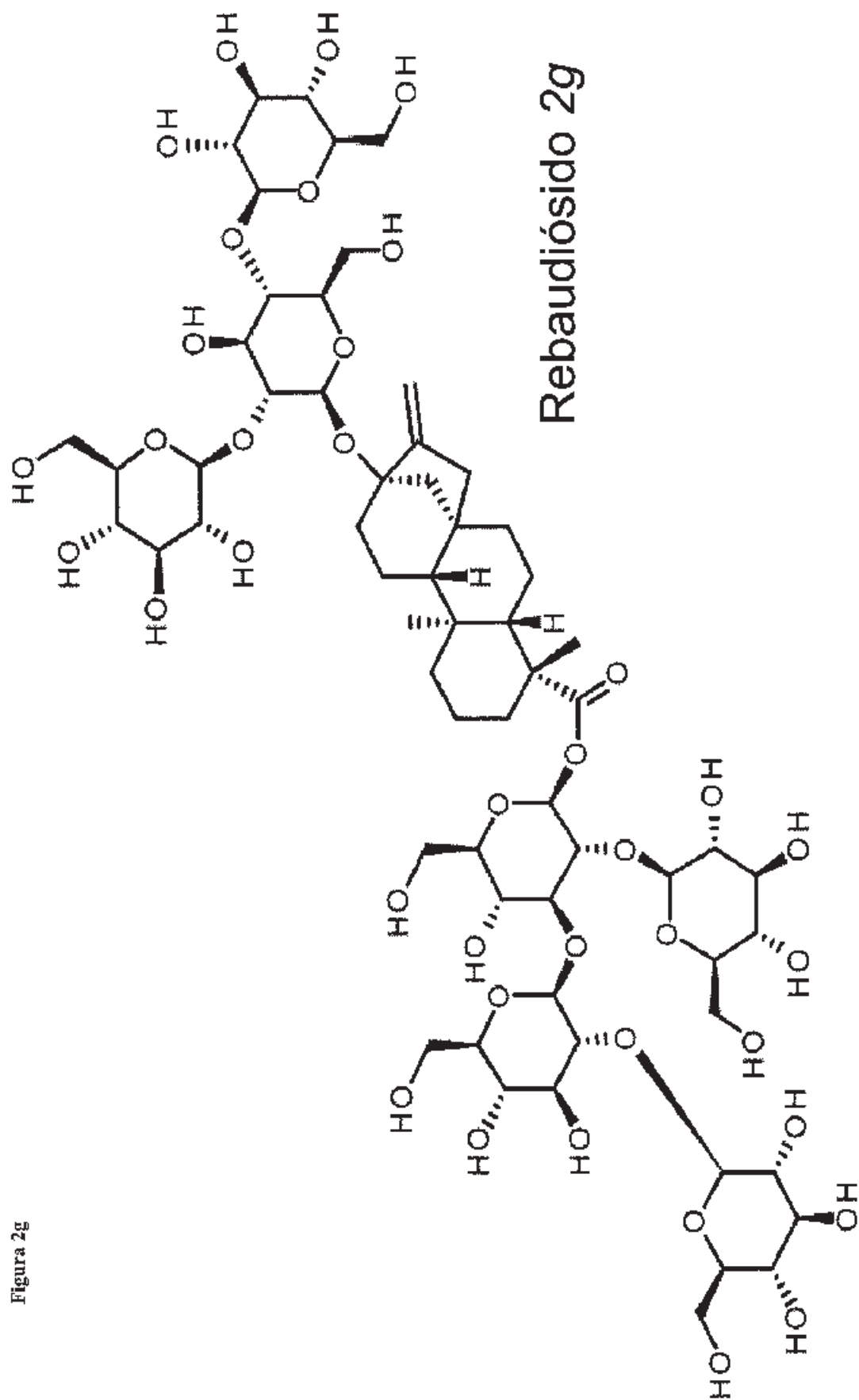


Figura 2g

Figura 2h

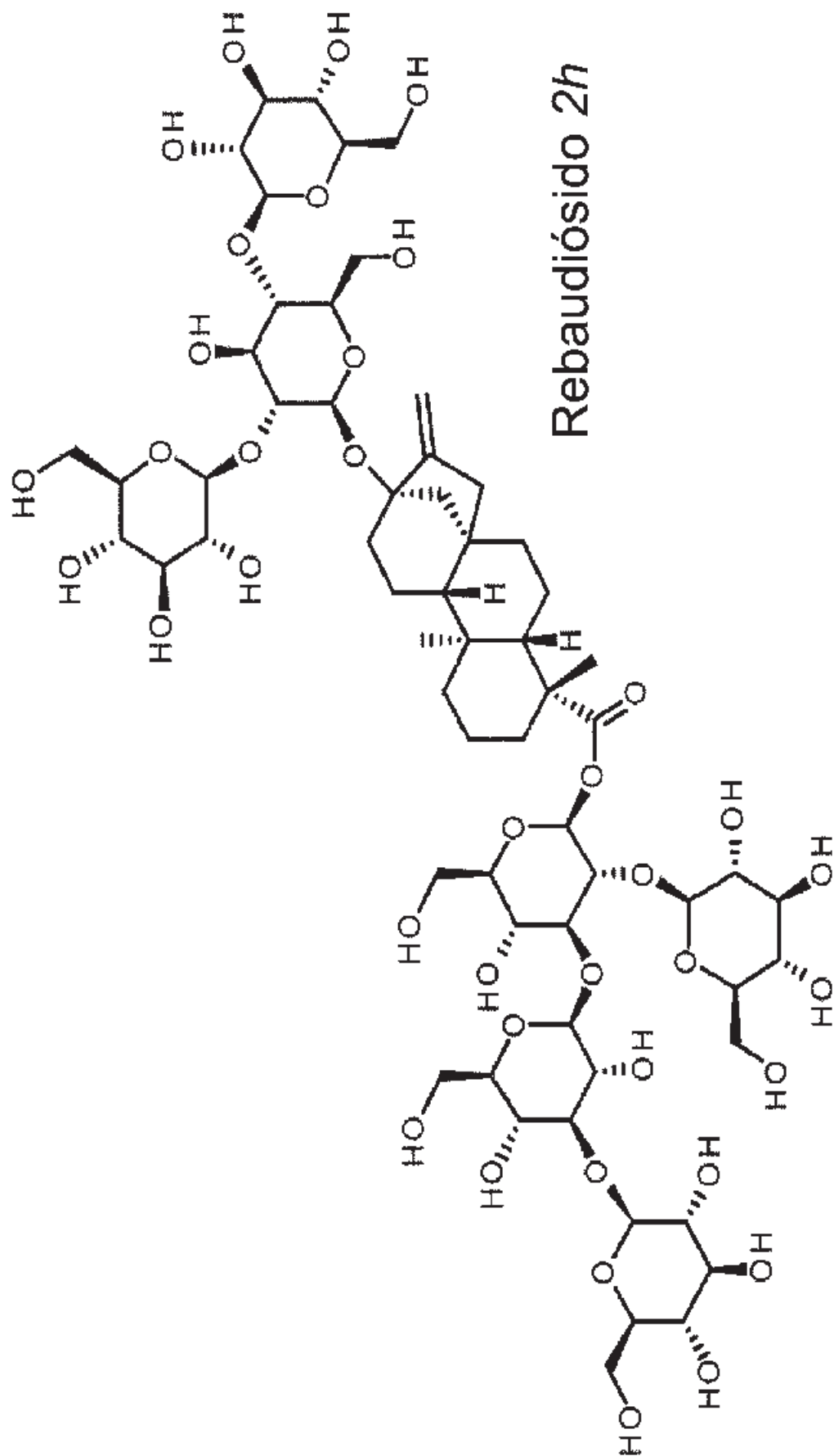
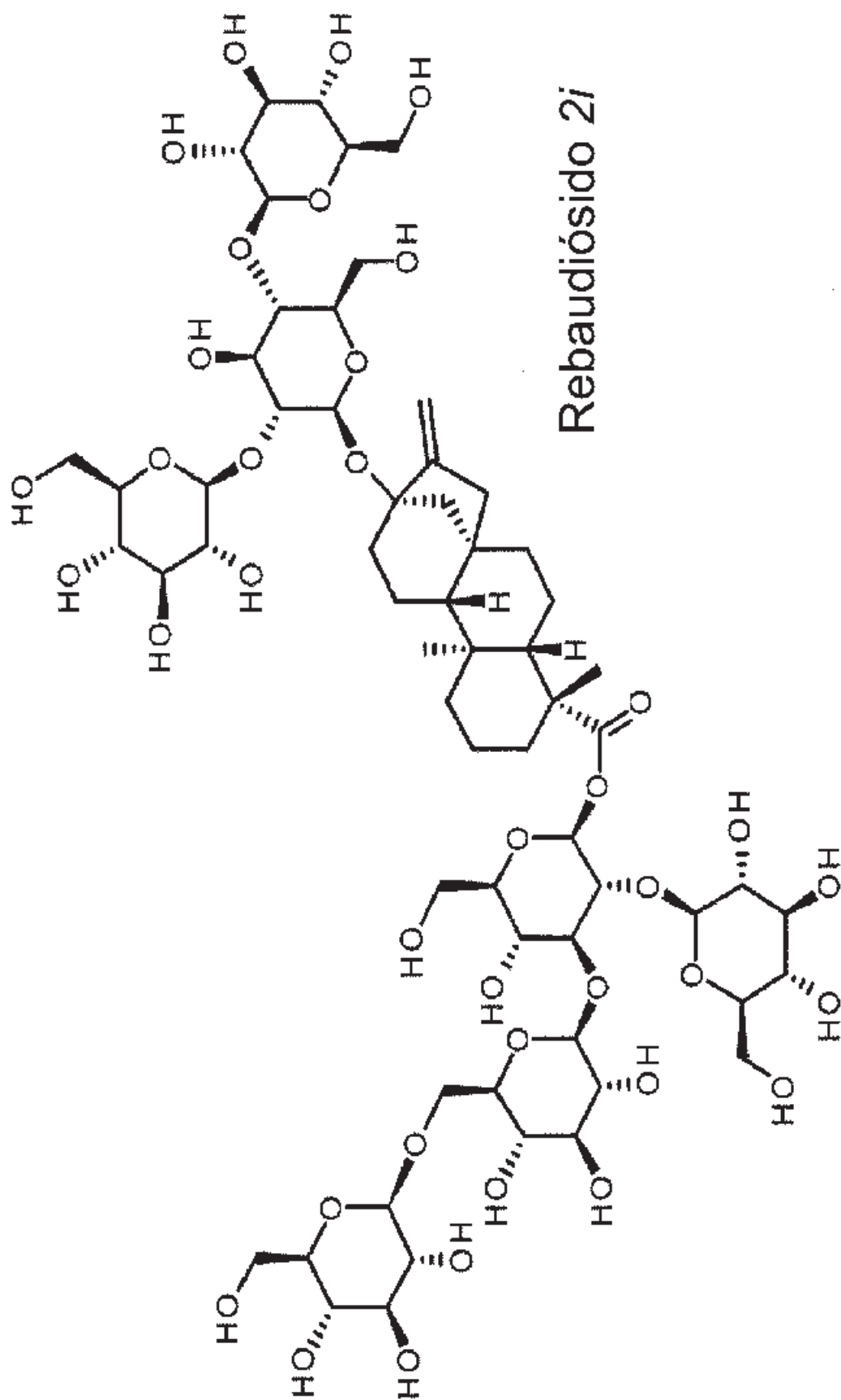


Figura 2i



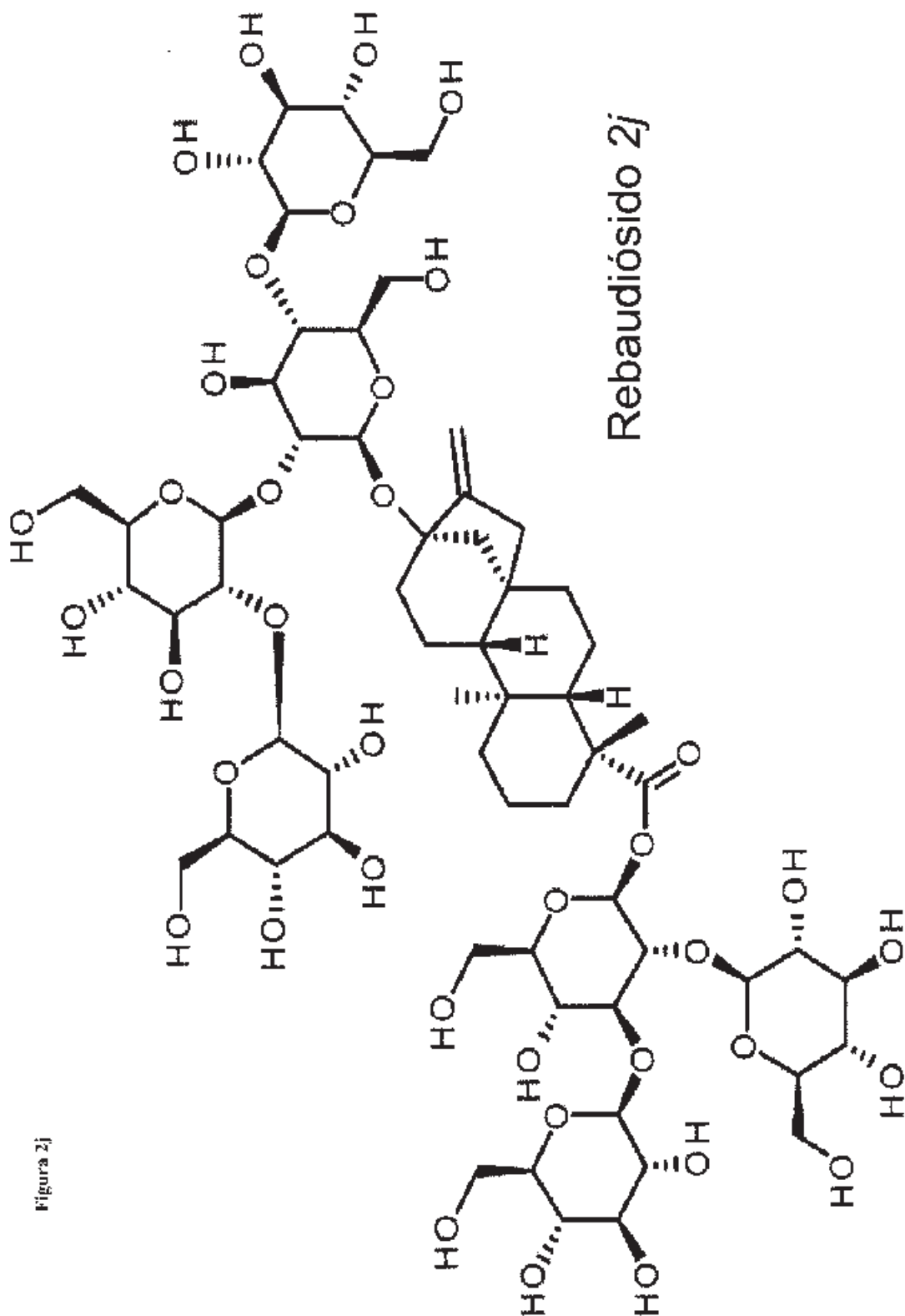


Figura 2j

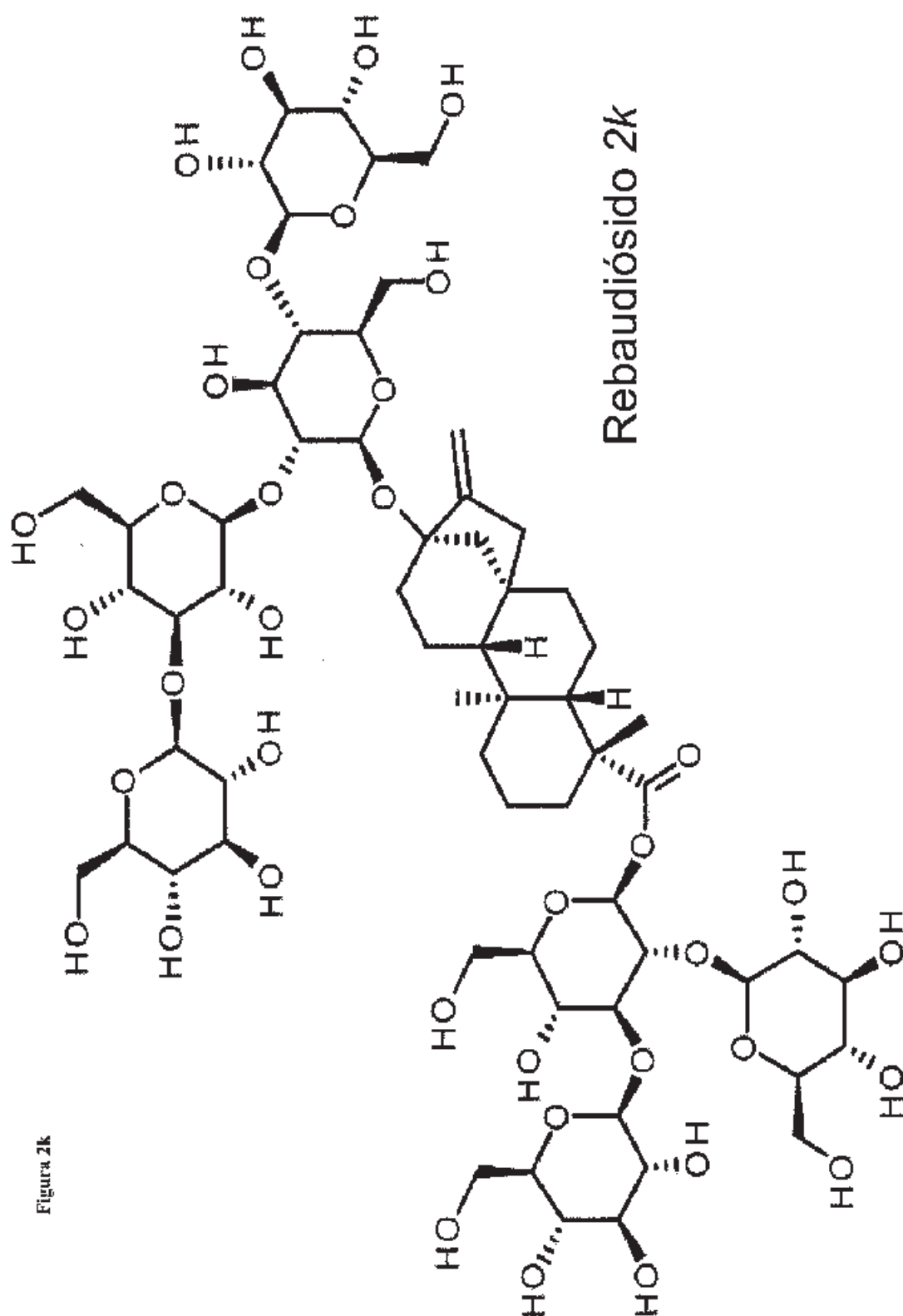


Figura 2k

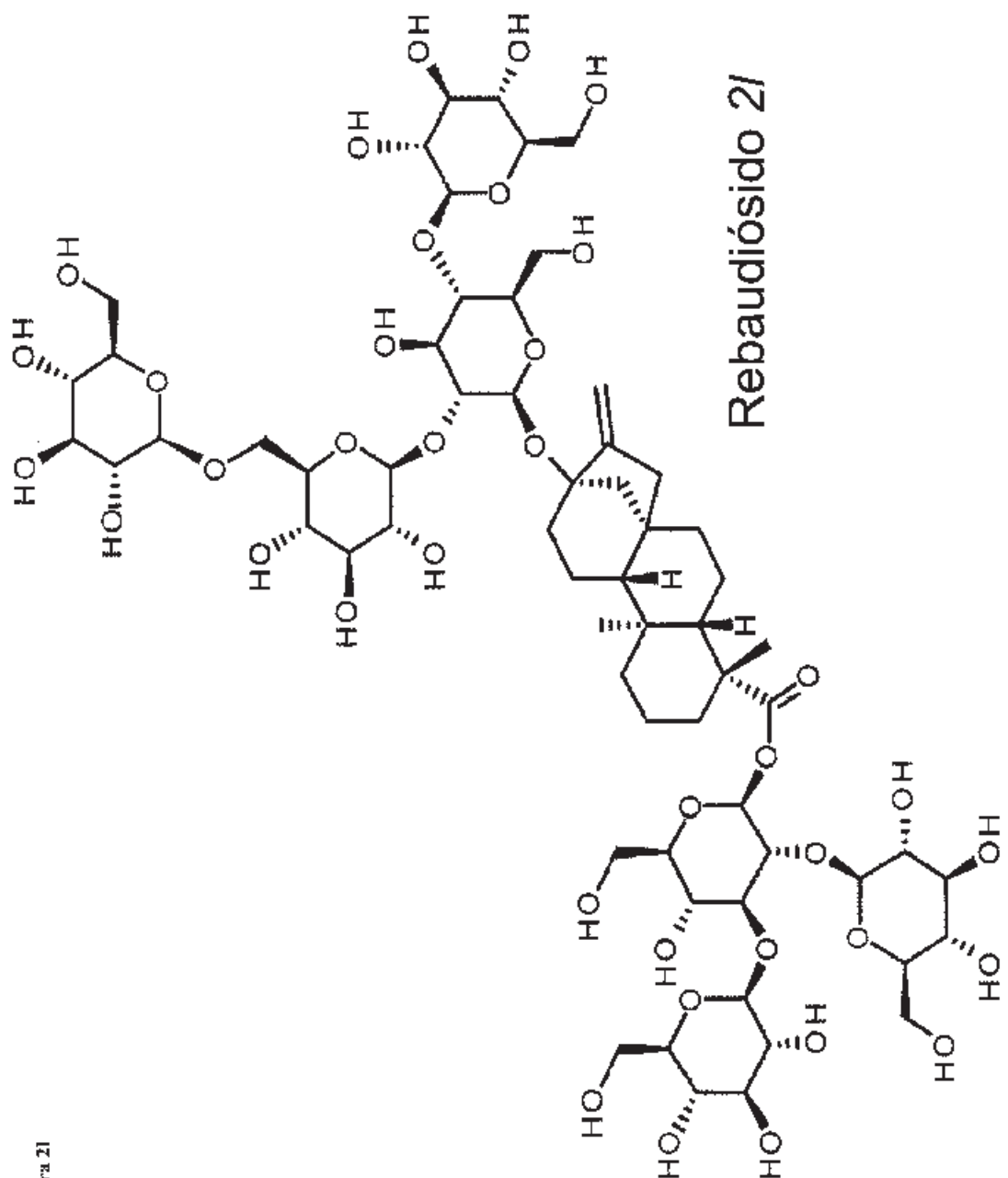


Figura 2I

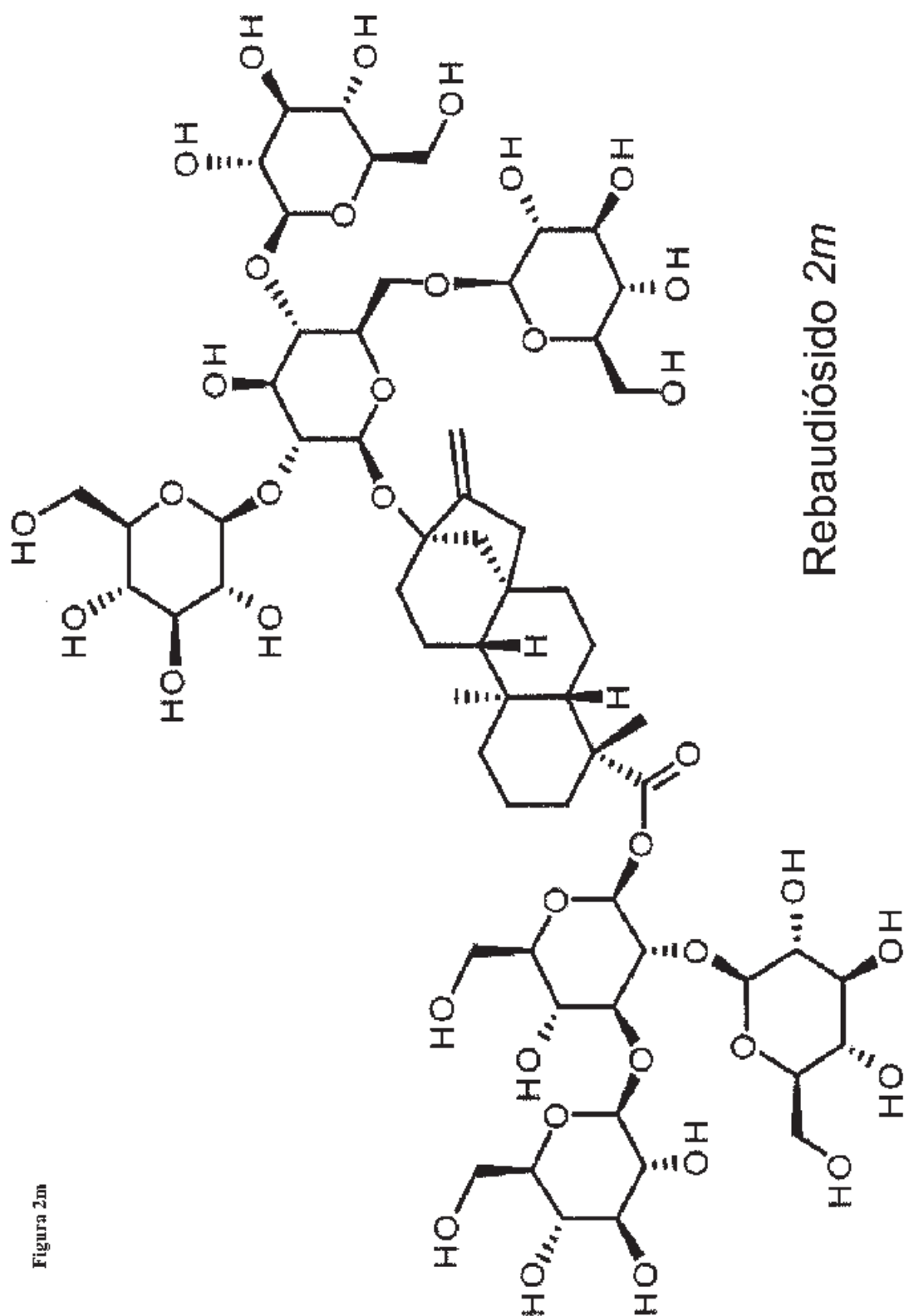


Figura 2m

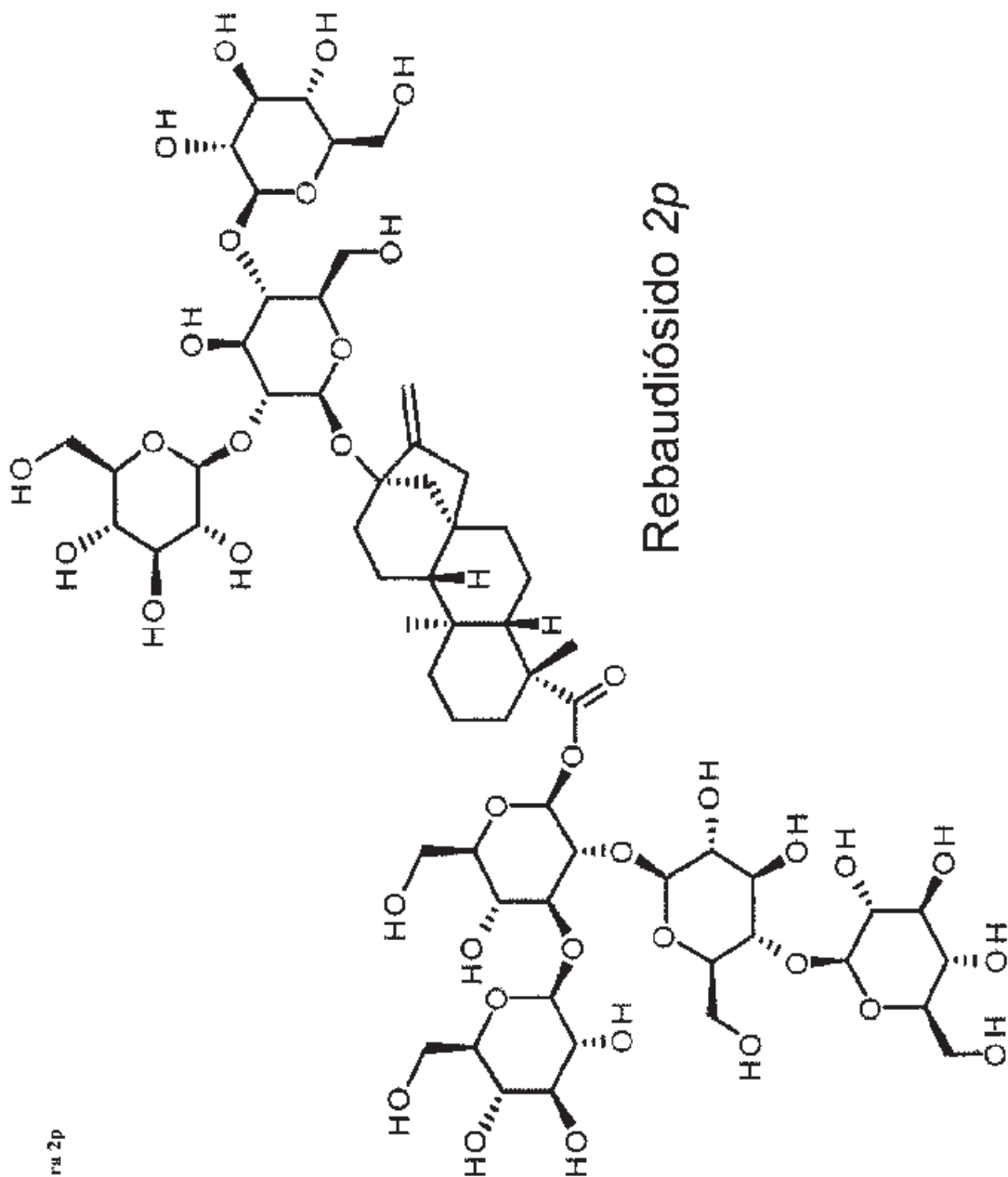
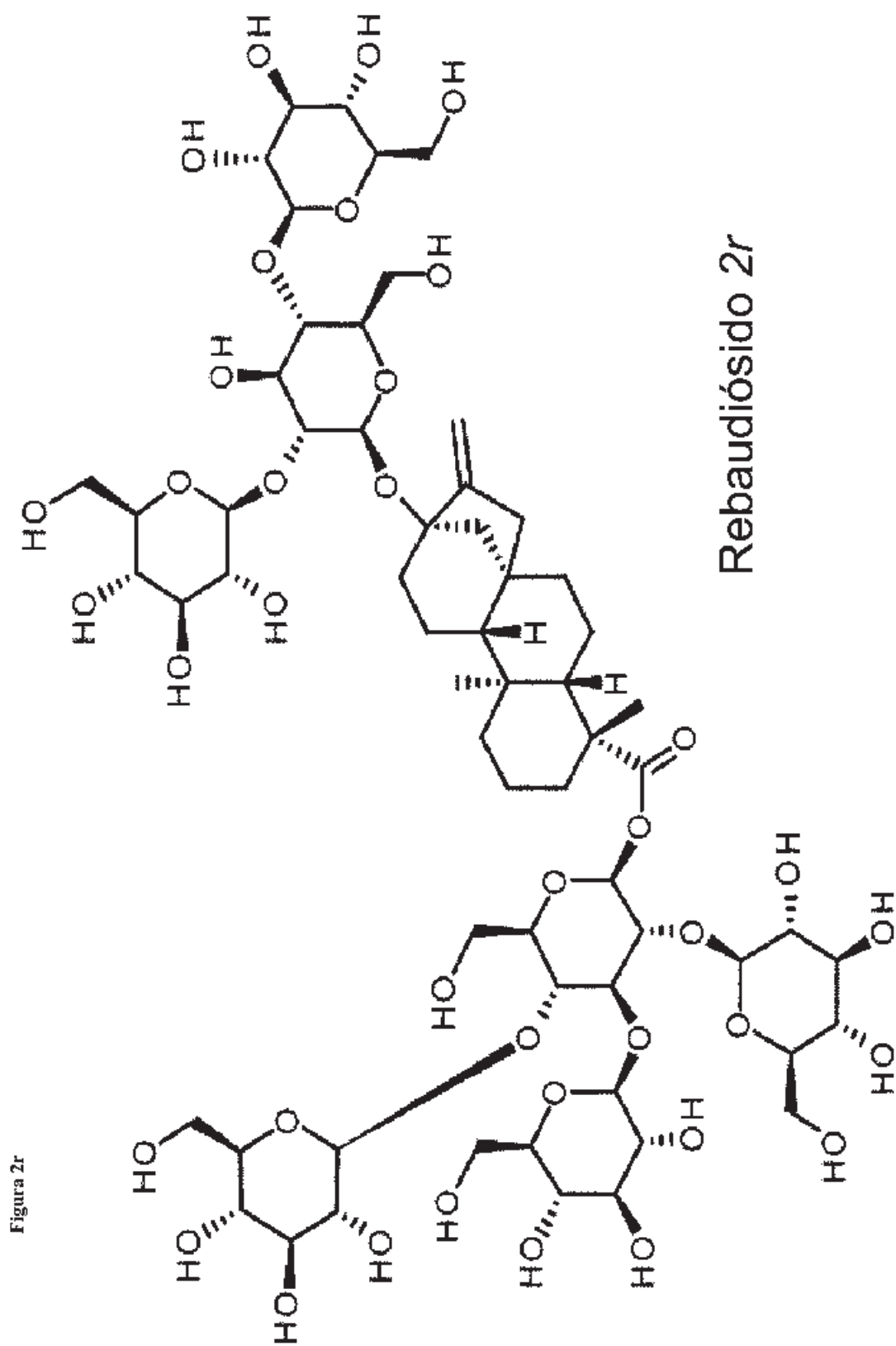


Figura 2p

Rebaudiósido 2q

Rebaudiósido 2q



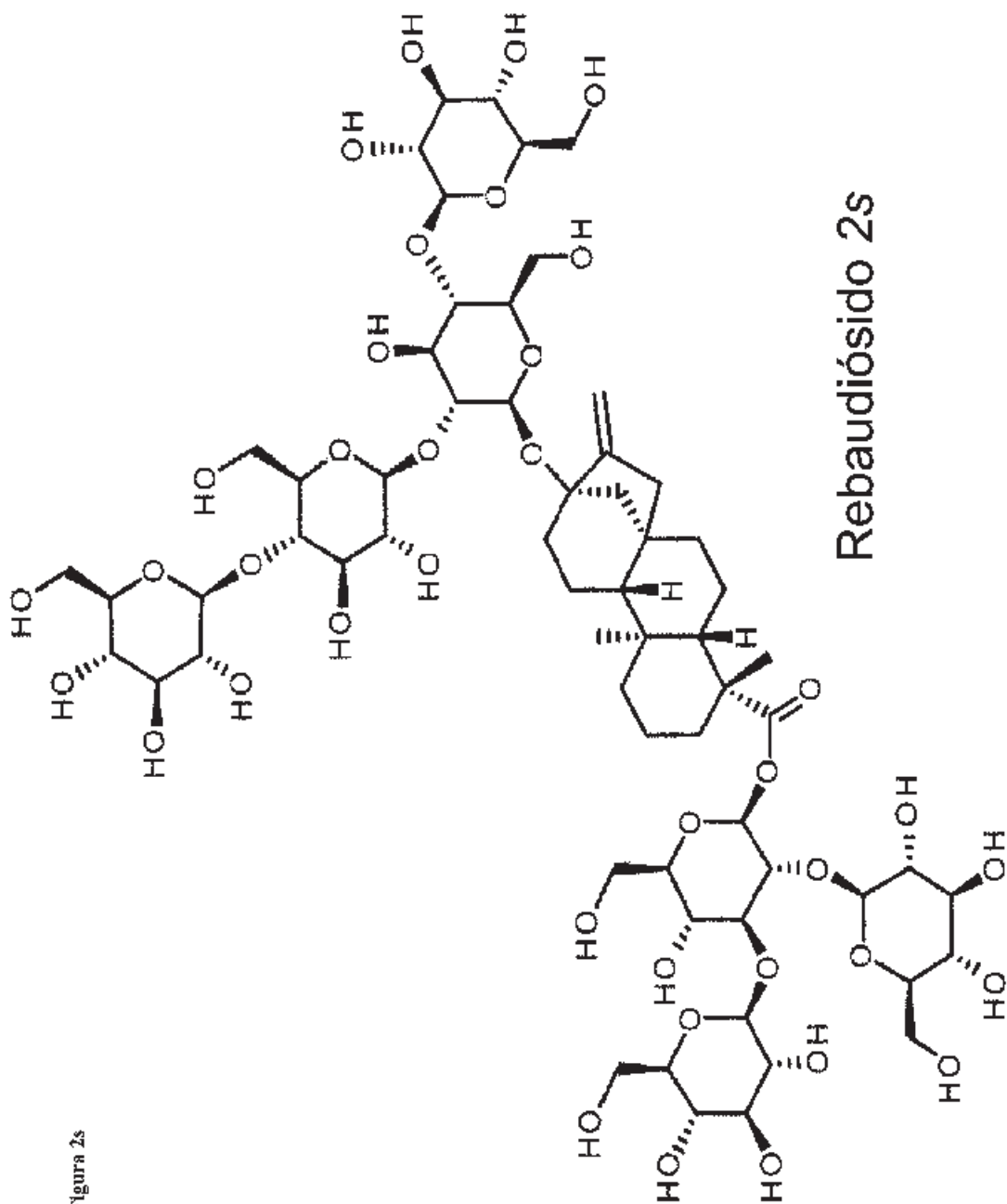


Figura 2s

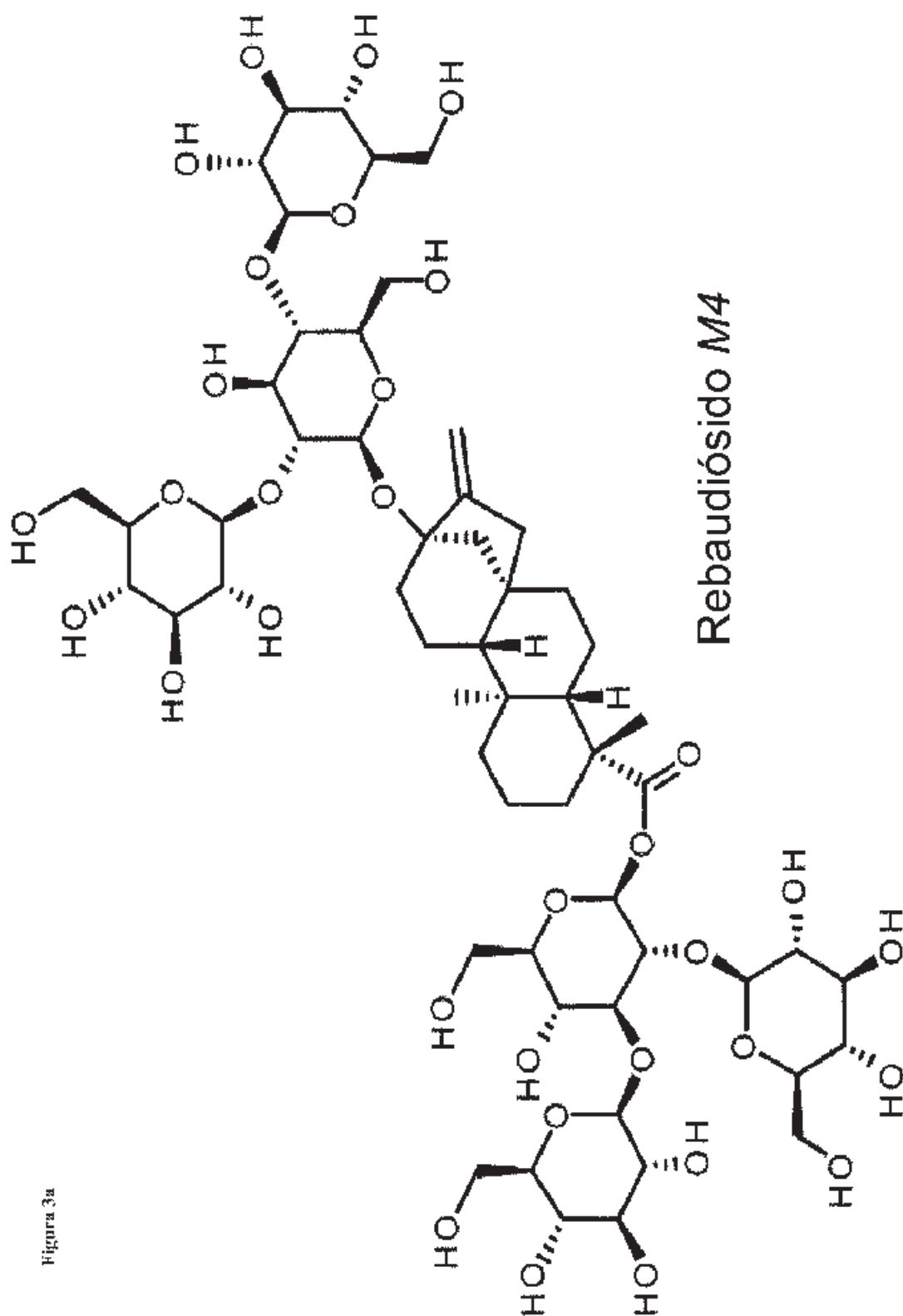


Figura 3a

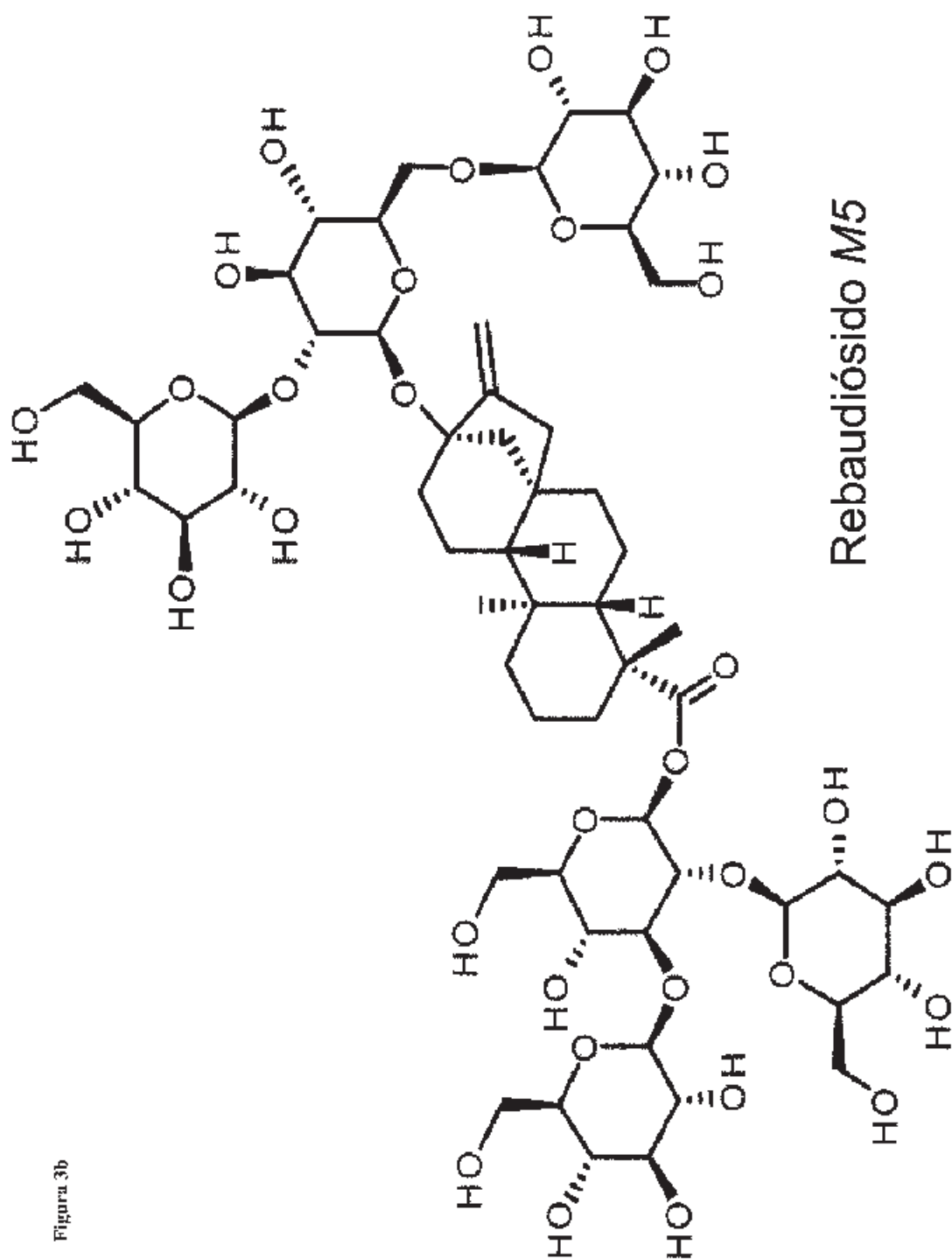


Figura 3b

Figura 4a

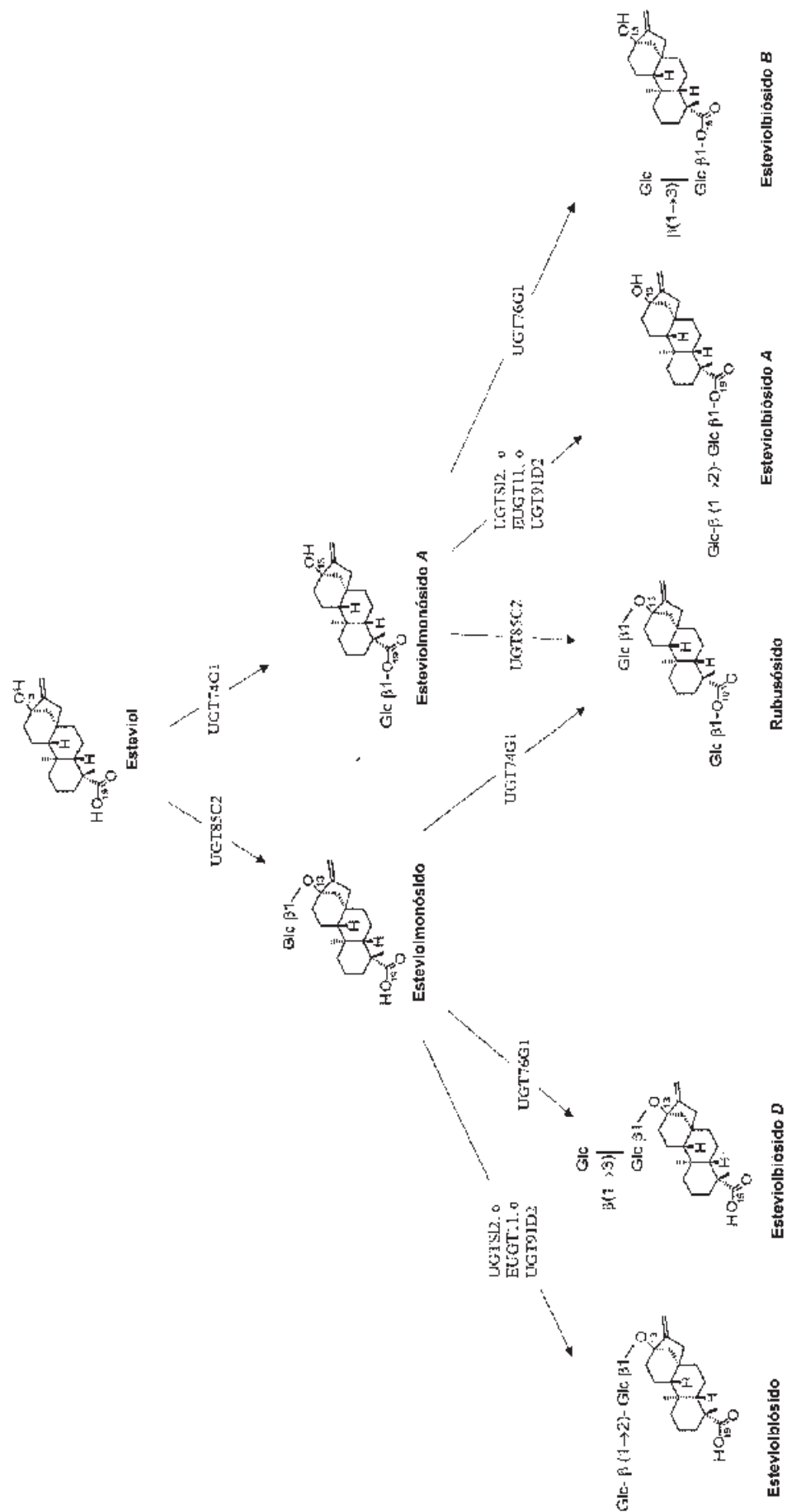
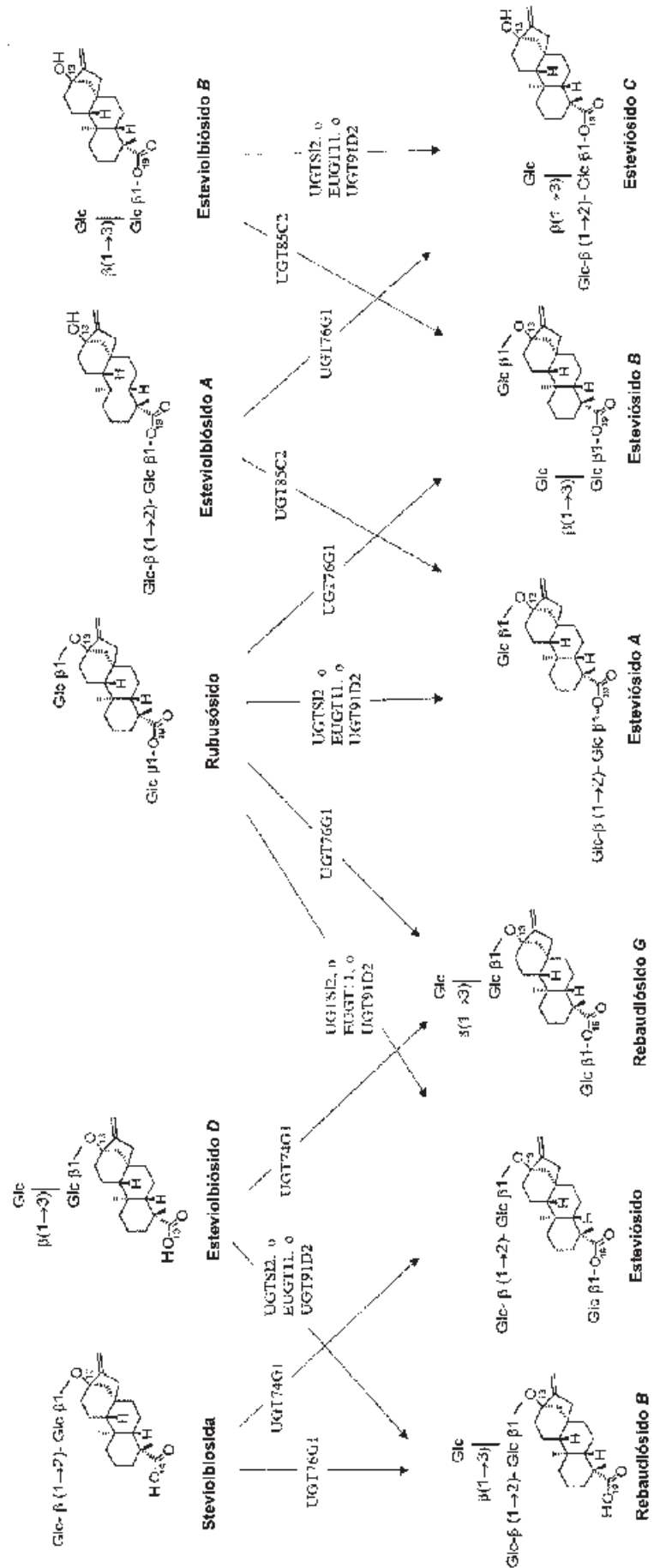
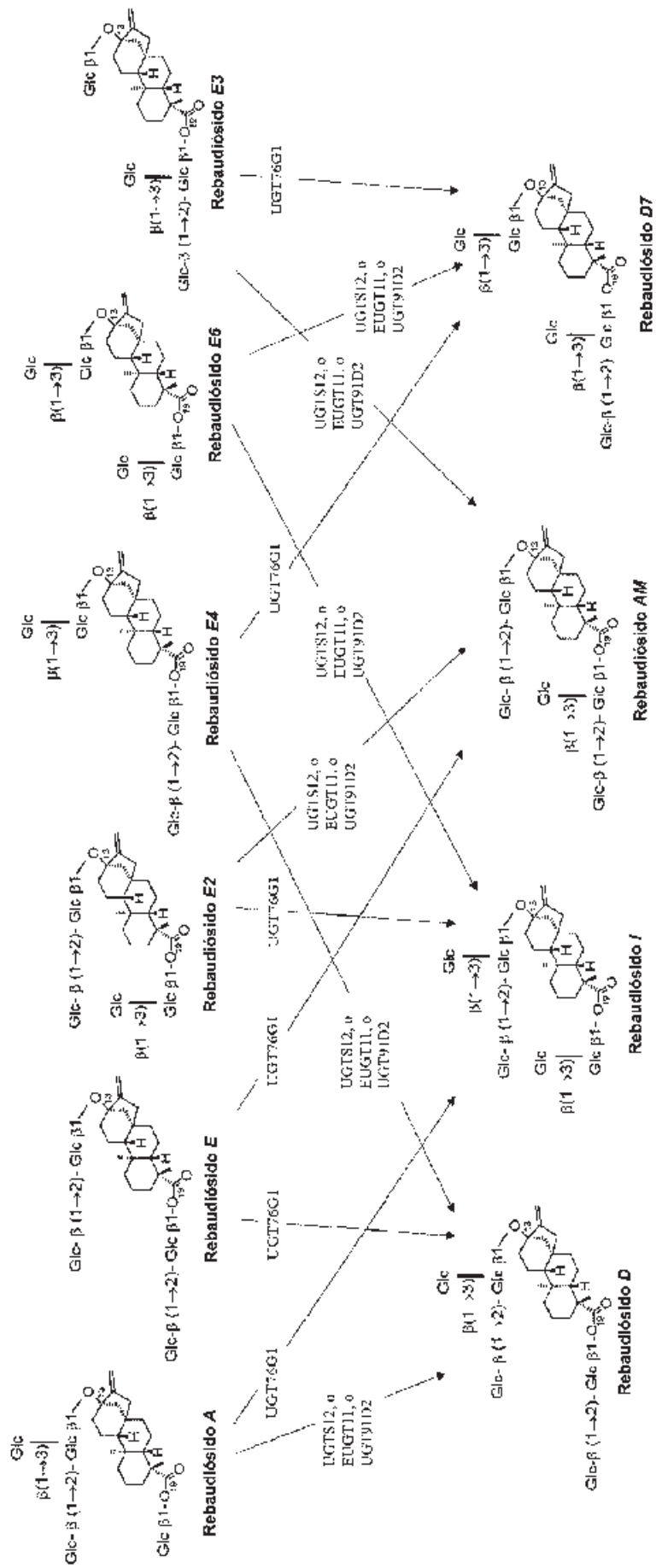


Figura 4b



[illegible]

Figura 4d



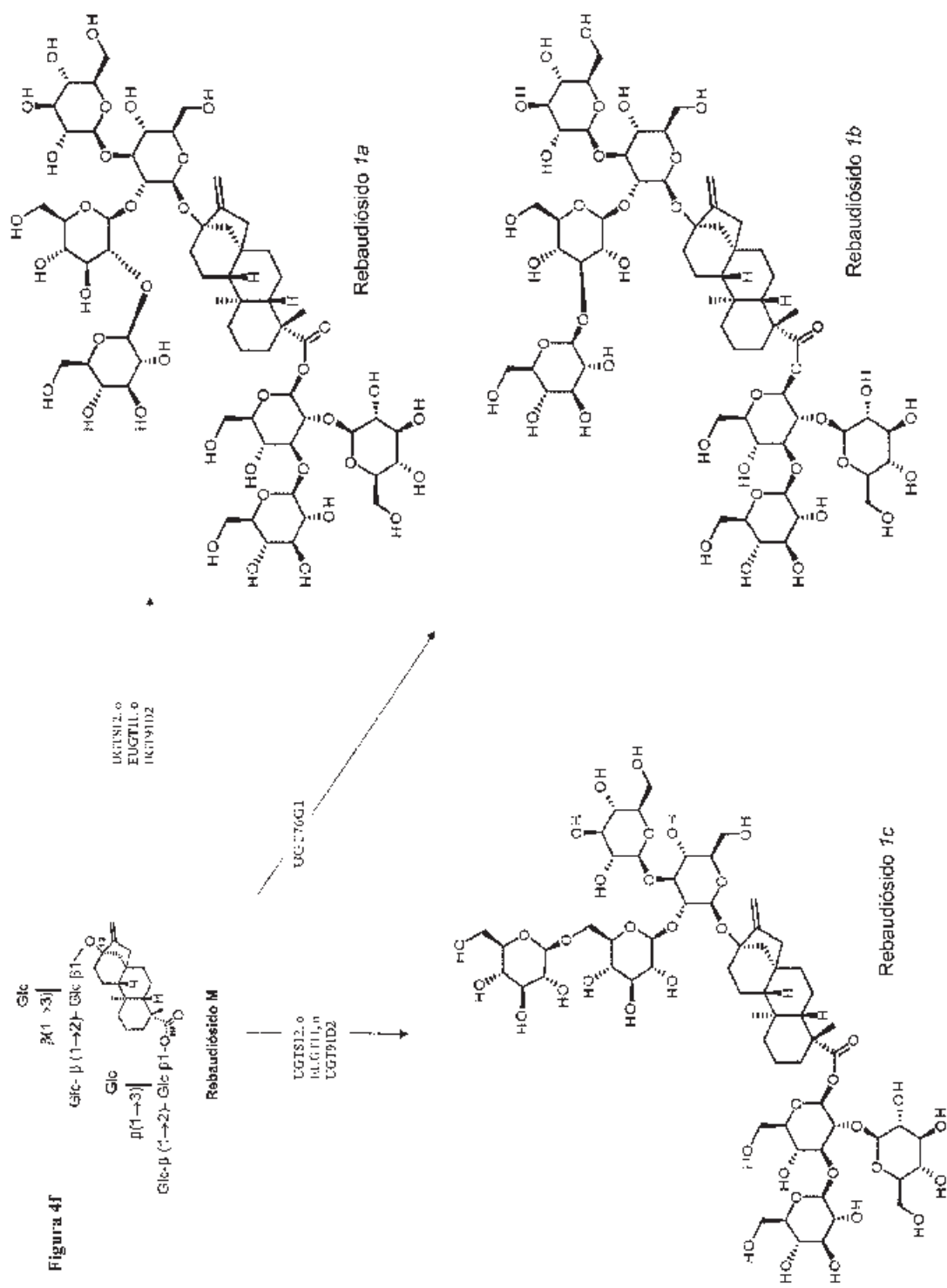
The diagram illustrates the metabolic pathway of rebaudioside D7, showing its conversion into rebaudiosides M, M4, and M5 through various enzymatic reactions. The starting material, Rebaudioside D7, is a triterpene glycoside with a complex sugar moiety. It is converted into Rebaudioside M, Rebaudioside M4, and Rebaudioside M5 via several enzymatic steps involving UGT and EGT enzymes.

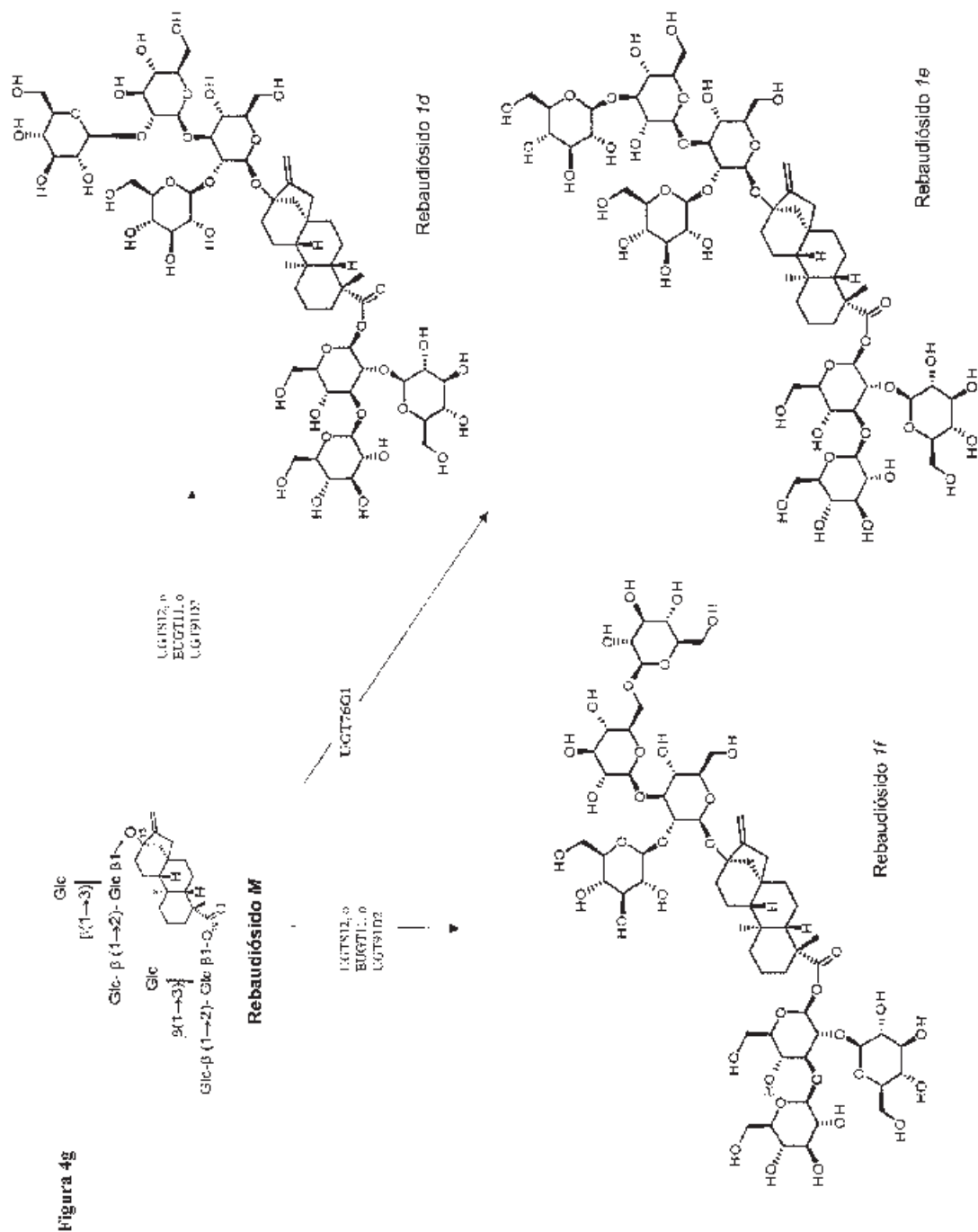
Rebaudioside D7 (Starting Material):

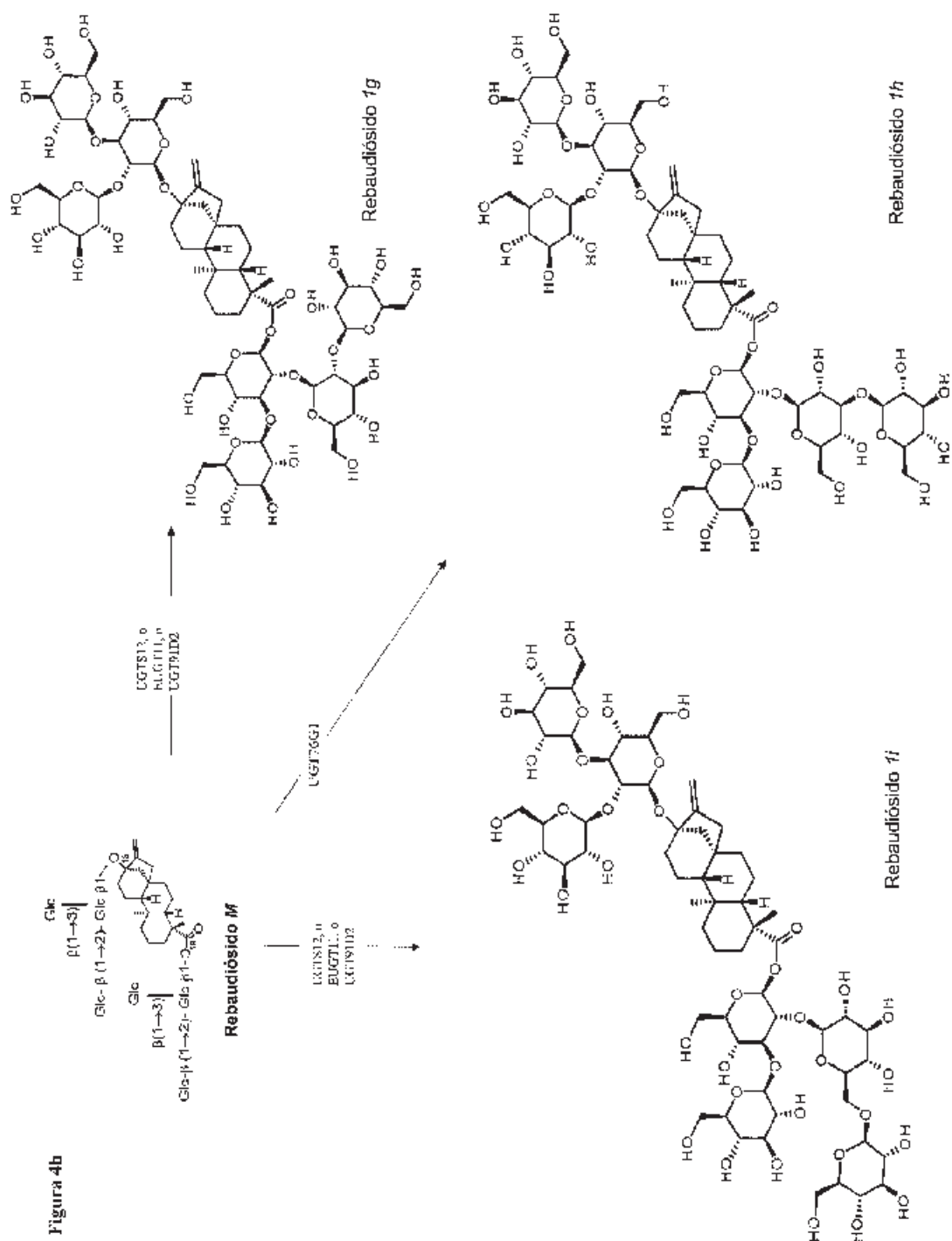
O=C1[C@H]2[C@@H](OC(=O)C[C@H]3O[C@H](CO)[C@H](O)[C@H]3O)[C@H](OC(=O)C[C@H]4O[C@H](CO)[C@H](O)[C@H]4O)[C@H](OC(=O)C[C@H]5O[C@H](CO)[C@H](O)[C@H]5O)[C@H]2[C@@H]1O

Enzymatic Conversions:

- Rebaudioside D7 to Rebaudioside M:** Catalyzed by UGT76G1.
- Rebaudioside D7 to Rebaudioside M4:** Catalyzed by UGT76G1, UGT76G2, UGT76G3, UGT76G4, UGT76G5, UGT76G6, UGT76G7, UGT76G8, UGT76G9, UGT76G10, UGT76G11, UGT76G12, UGT76G13, UGT76G14, UGT76G15, UGT76G16, UGT76G17, UGT76G18, UGT76G19, UGT76G20, UGT76G21, UGT76G22, UGT76G23, UGT76G24, UGT76G25, UGT76G26, UGT76G27, UGT76G28, UGT76G29, UGT76G30, UGT76G31, UGT76G32, UGT76G33, UGT76G34, UGT76G35, UGT76G36, UGT76G37, UGT76G38, UGT76G39, UGT76G40, UGT76G41, UGT76G42, UGT76G43, UGT76G44, UGT76G45, UGT76G46, UGT76G47, UGT76G48, UGT76G49, UGT76G50, UGT76G51, UGT76G52, UGT76G53, UGT76G54, UGT76G55, UGT76G56, UGT76G57, UGT76G58, UGT76G59, UGT76G60, UGT76G61, UGT76G62, UGT76G63, UGT76G64, UGT76G65, UGT76G66, UGT76G67, UGT76G68, UGT76G69, UGT76G70, UGT76G71, UGT76G72, UGT76G73, UGT76G74, UGT76G75, UGT76G76, UGT76G77, UGT76G78, UGT76G79, UGT76G80, UGT76G81, UGT76G82, UGT76G83, UGT76G84, UGT76G85, UGT76G86, UGT76G87, UGT76G88, UGT76G89, UGT76G90, UGT76G91, UGT76G92, UGT76G93, UGT76G94, UGT76G95, UGT76G96, UGT76G97, UGT76G98, UGT76G99, UGT76G100, UGT76G101, UGT76G102, UGT76G103, UGT76G104, UGT76G105, UGT76G106, UGT76G107, UGT76G108, UGT76G109, UGT76G110, UGT76G111, UGT76G112, UGT76G113, UGT76G114, UGT76G115, UGT76G116, UGT76G117, UGT76G118, UGT76G119, UGT76G120, UGT76G121, UGT76G122, UGT76G123, UGT76G124, UGT76G125, UGT76G126, UGT76G127, UGT76G128, UGT76G129, UGT76G130, UGT76G131, UGT76G132, UGT76G133, UGT76G134, UGT76G135, UGT76G136, UGT76G137, UGT76G138, UGT76G139, UGT76G140, UGT76G141, UGT76G142, UGT76G143, UGT76G144, UGT76G145, UGT76G146, UGT76G147, UGT76G148, UGT76G149, UGT76G150, UGT76G151, UGT76G152, UGT76G153, UGT76G154, UGT76G155, UGT76G156, UGT76G157, UGT76G158, UGT76G159, UGT76G160, UGT76G161, UGT76G162, UGT76G163, UGT76G164, UGT76G165, UGT76G166, UGT76G167, UGT76G168, UGT76G169, UGT76G170, UGT76G171, UGT76G172, UGT76G173, UGT76G174, UGT76G175, UGT76G176, UGT76G177, UGT76G178, UGT76G179, UGT76G180, UGT76G181, UGT76G182, UGT76G183, UGT76G184, UGT76G185, UGT76G186, UGT76G187, UGT76G188, UGT76G189, UGT76G190, UGT76G191, UGT76G192, UGT76G193, UGT76G194, UGT76G195, UGT76G196, UGT76G197, UGT76G198, UGT76G199, UGT76G200, UGT76G201, UGT76G202, UGT76G203, UGT76G204, UGT76G205, UGT76G206, UGT76G207, UGT76G208, UGT76G209, UGT76G210, UGT76G211, UGT76G212, UGT76G213, UGT76G214, UGT76G215, UGT76G216, UGT76G217, UGT76G218, UGT76G219, UGT76G220, UGT76G221, UGT76G222, UGT76G223, UGT76G224, UGT76G225, UGT76G226, UGT76G227, UGT76G228, UGT76G229, UGT76G230, UGT76G231, UGT76G232, UGT76G233, UGT76G234, UGT76G235, UGT76G236, UGT76G237, UGT76G238, UGT76G239, UGT76G240, UGT76G241, UGT76G242, UGT76G243, UGT76G244, UGT76G245, UGT76G246, UGT76G247, UGT76G248, UGT76G249, UGT76G250, UGT76G251, UGT76G252, UGT76G253, UGT76G254, UGT76G255, UGT76G256, UGT76G257, UGT76G258, UGT76G259, UGT76G260, UGT76G261, UGT76G262, UGT76G263, UGT76G264, UGT76G265, UGT76G266, UGT76G267, UGT76G268, UGT76G269, UGT76G270, UGT76G271, UGT76G272, UGT76G273, UGT76G274, UGT76G275, UGT76G276, UGT76G277, UGT76G278, UGT76G279, UGT76G280, UGT76G281, UGT76G282, UGT76G283, UGT76G284, UGT76G285, UGT76G286, UGT76G287, UGT76G288, UGT76G289, UGT76G290, UGT76G291, UGT76G292, UGT76G293, UGT76G294, UGT76G295, UGT76G296, UGT76G297, UGT76G298, UGT76G299, UGT76G300, UGT76G301, UGT76G302, UGT76G303, UGT76G304, UGT76G305, UGT76G306, UGT76G307, UGT76G308, UGT76G309, UGT76G310, UGT76G311, UGT76G312, UGT76G313, UGT76G314, UGT76G315, UGT76G316, UGT76G317, UGT76G318, UGT76G319, UGT76G320, UGT76G321, UGT76G322, UGT76G323, UGT76G324, UGT76G325, UGT76G326, UGT76G327, UGT76G328, UGT76G329, UGT76G330, UGT76G331, UGT76G332, UGT76G333, UGT76G334, UGT76G335, UGT76G336, UGT76G337, UGT76G338, UGT76G339, UGT76G340, UGT76G341, UGT76G342, UGT76G343, UGT76G344, UGT76G345, UGT76G346, UGT76G347, UGT76G348, UGT76G349, UGT76G350, UGT76G351, UGT76G352, UGT76G353, UGT76G354, UGT76G355, UGT76G356, UGT76G357, UGT76G358, UGT76G359, UGT76G360, UGT76G361, UGT76G362, UGT76G363, UGT76G364, UGT76G365, UGT76G366, UGT76G367, UGT76G368, UGT76G369, UGT76G370, UGT76G371, UGT76G372, UGT76G373, UGT76G374, UGT76G375, UGT76G376, UGT76G377, UGT76G378, UGT76G379, UGT76G380, UGT76G381, UGT76G382, UGT76G383, UGT76G384, UGT76G385, UGT76G386, UGT76G387, UGT76G388, UGT76G389, UGT76G390, UGT76G391, UGT76G392, UGT76G393, UGT76G394, UGT76G395, UGT76G396, UGT76G397, UGT76G398, UGT76G399, UGT76G400, UGT76G401, UGT76G402, UGT76G403, UGT76G404, UGT76G405, UGT76G406, UGT76G407, UGT76G408, UGT76G409, UGT76G410, UGT76G411, UGT76G412, UGT76G413, UGT76G414, UGT76G415, UGT76G416, UGT76G417, UGT76G418, UGT76G419, UGT76G420, UGT76G421, UGT76G422, UGT76G423, UGT76G424, UGT76G425, UGT76G426, UGT76G427, UGT







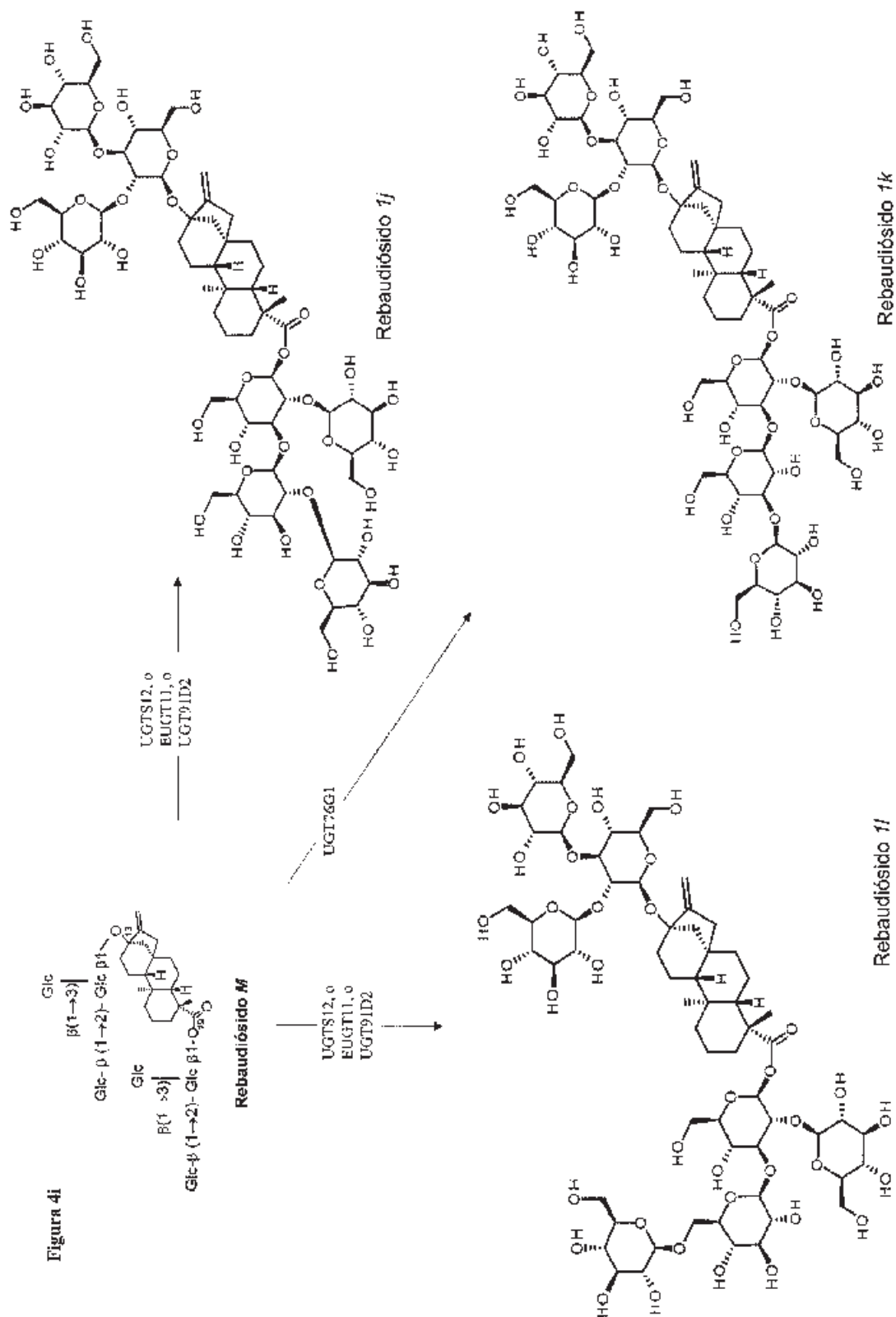
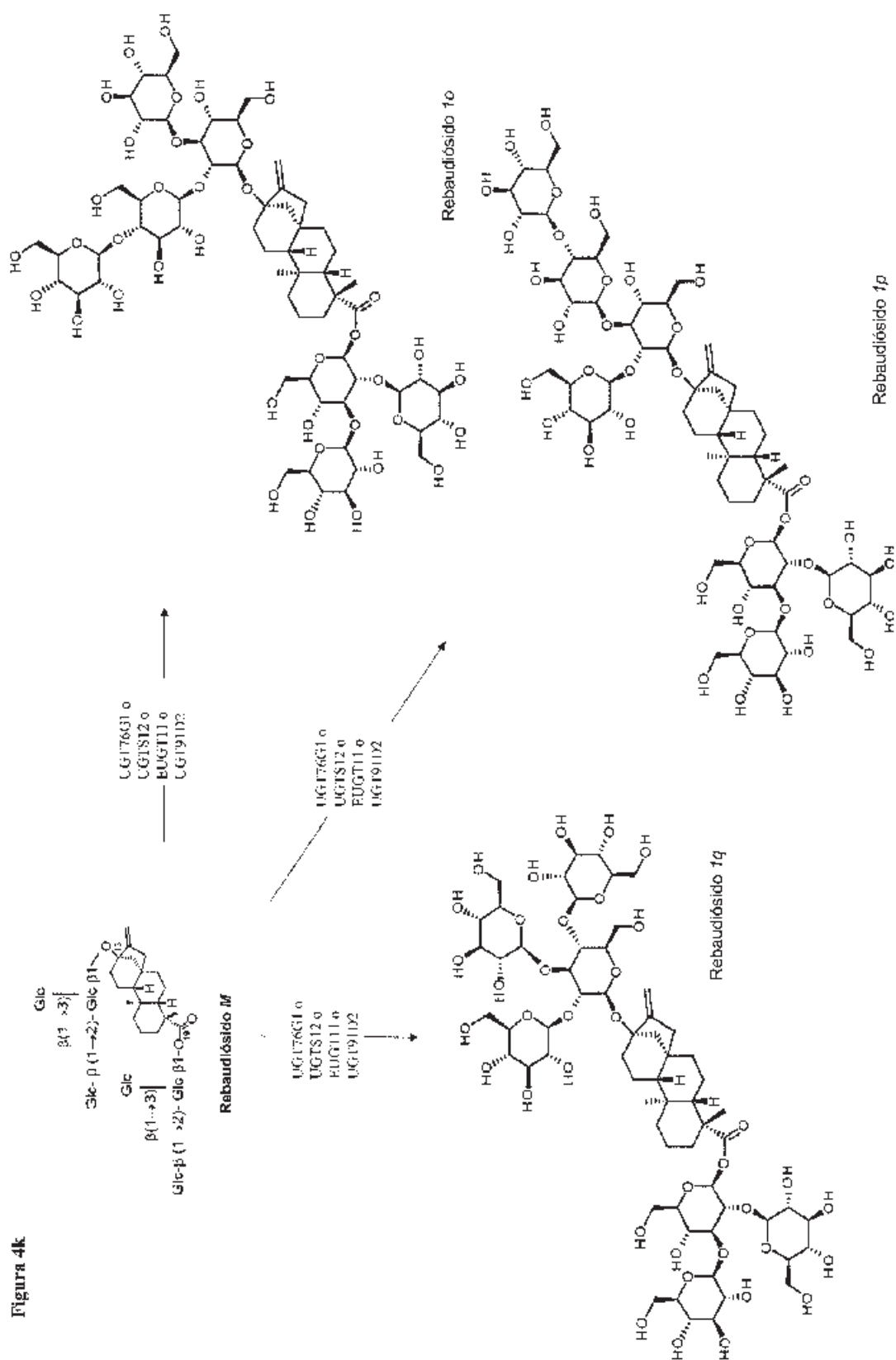
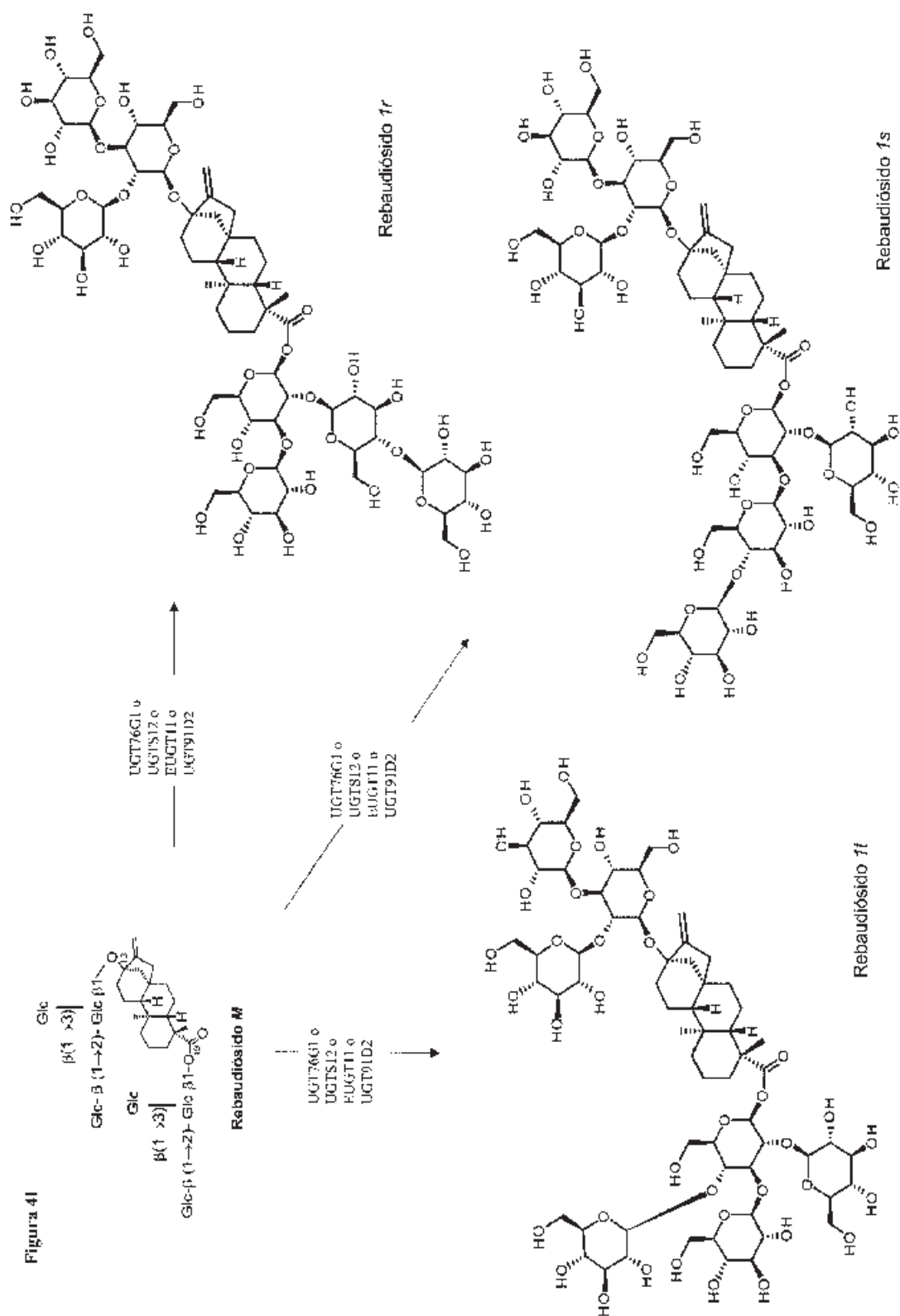
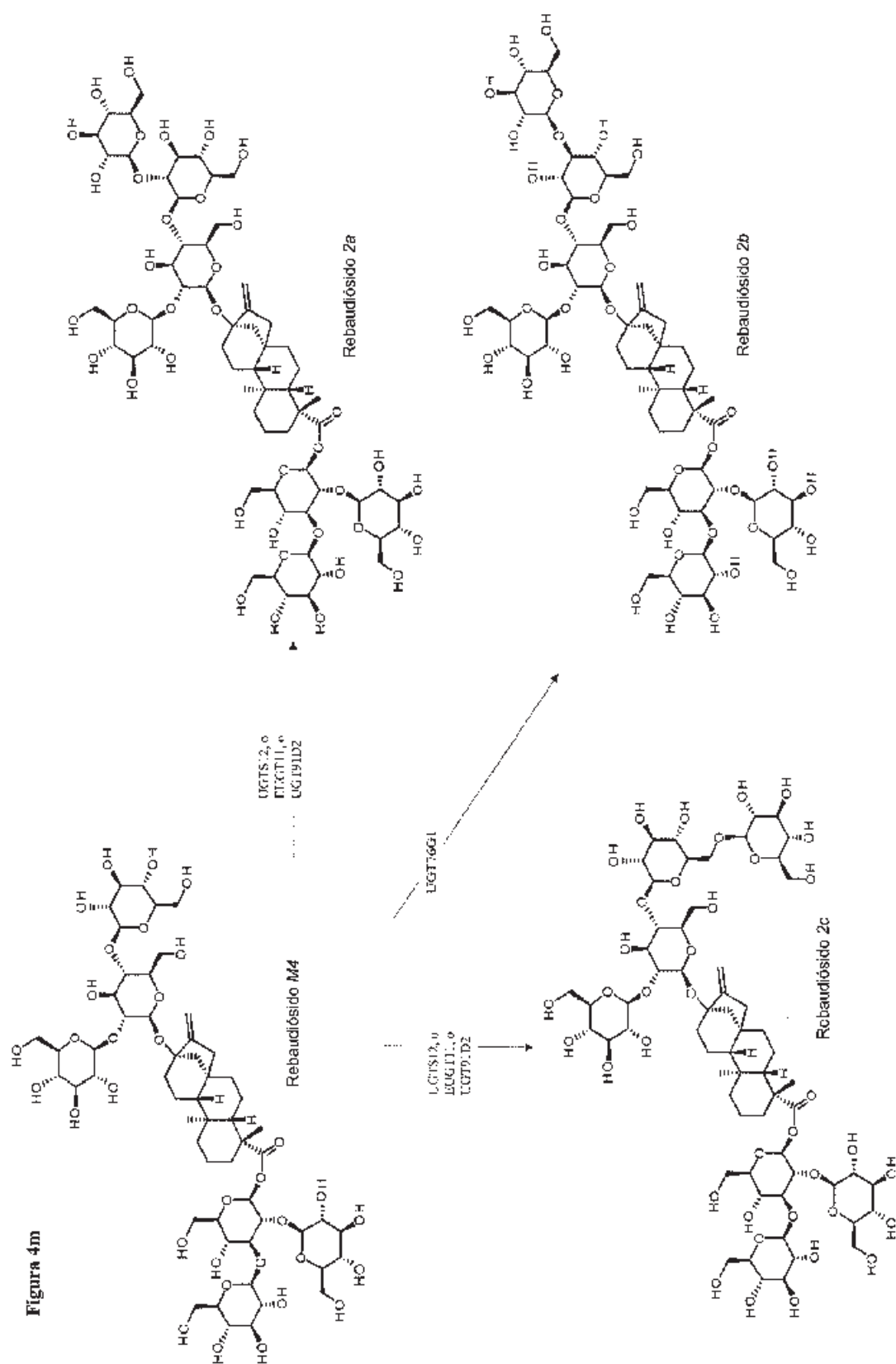
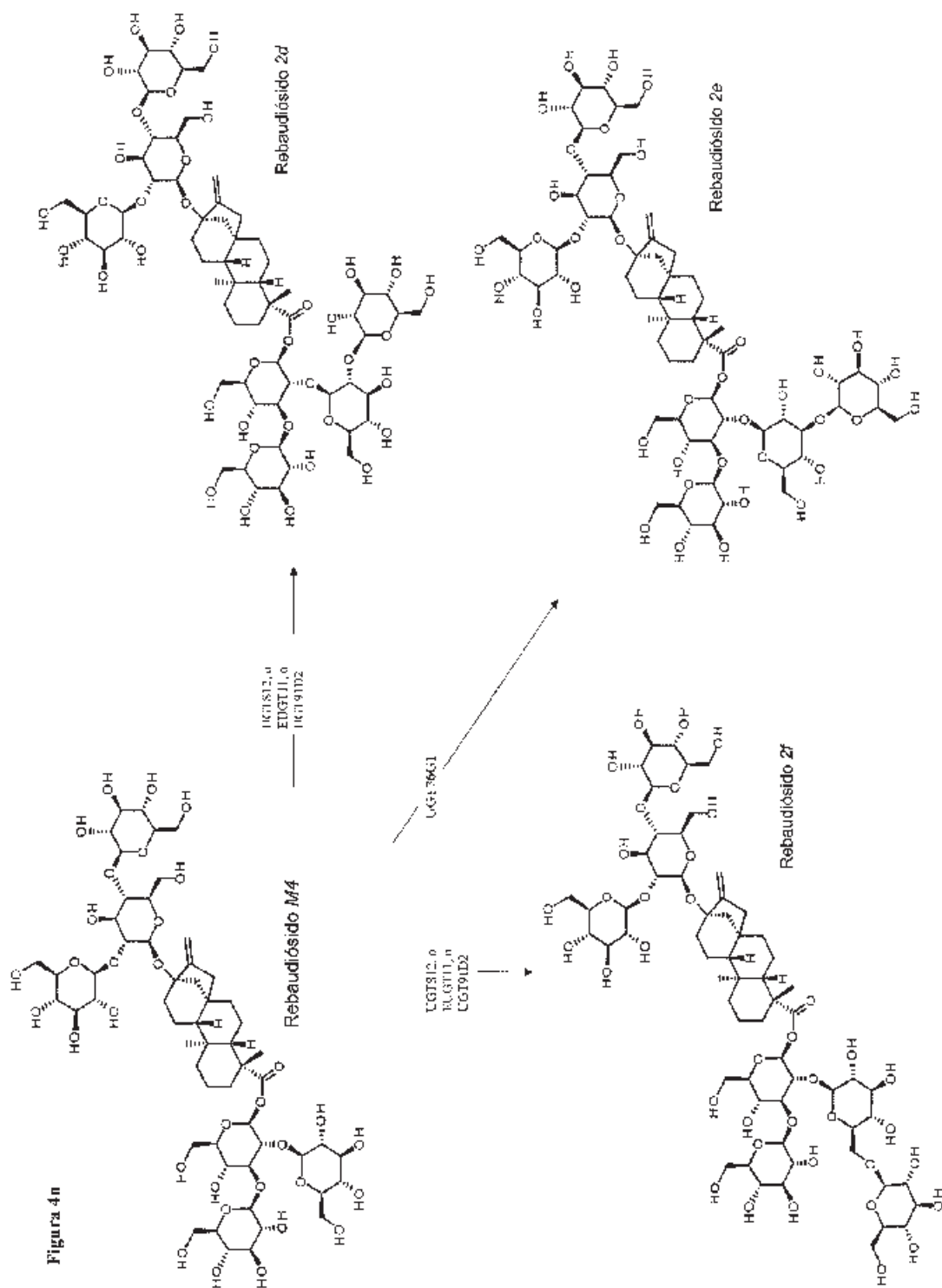


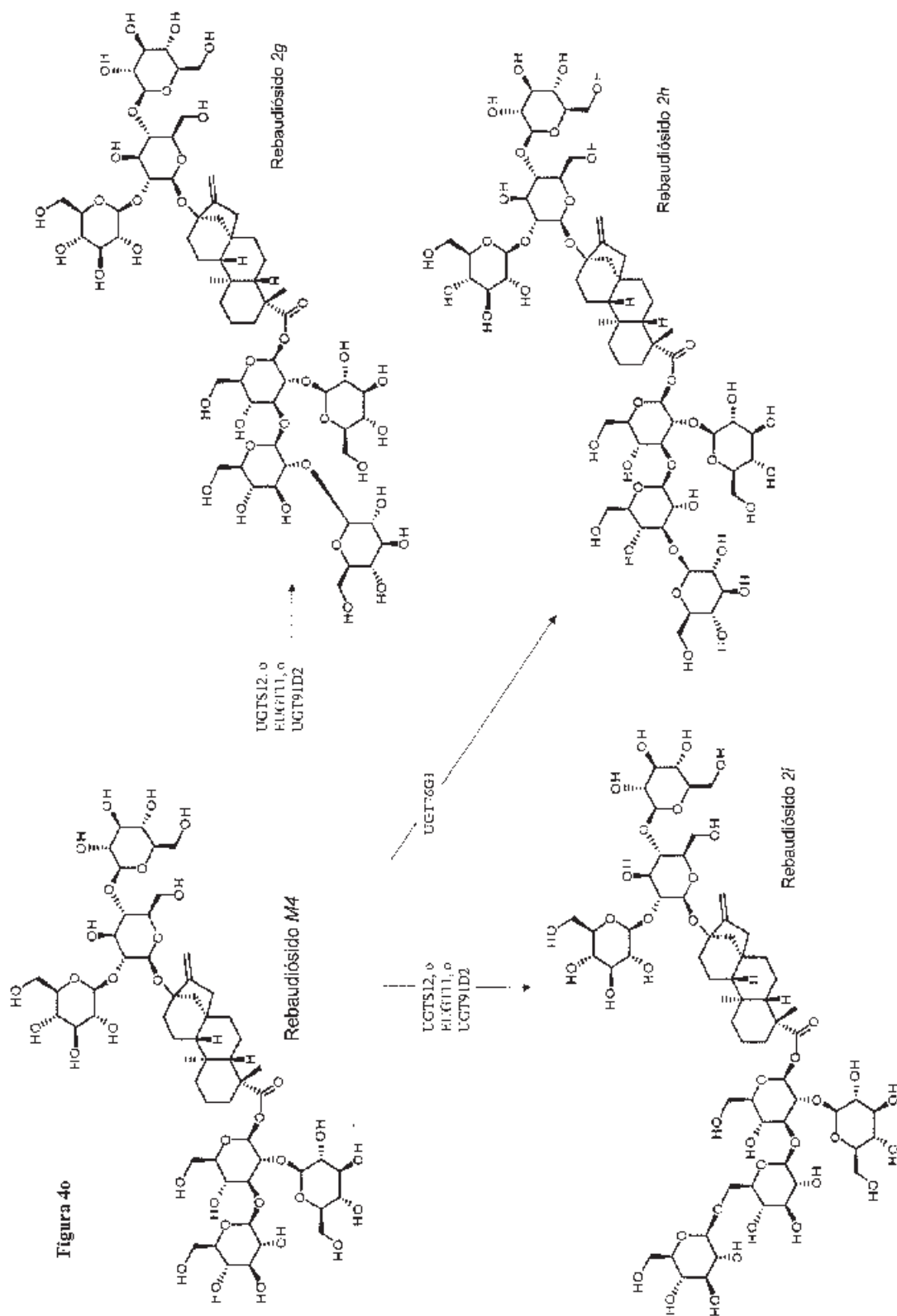
Figura 4k

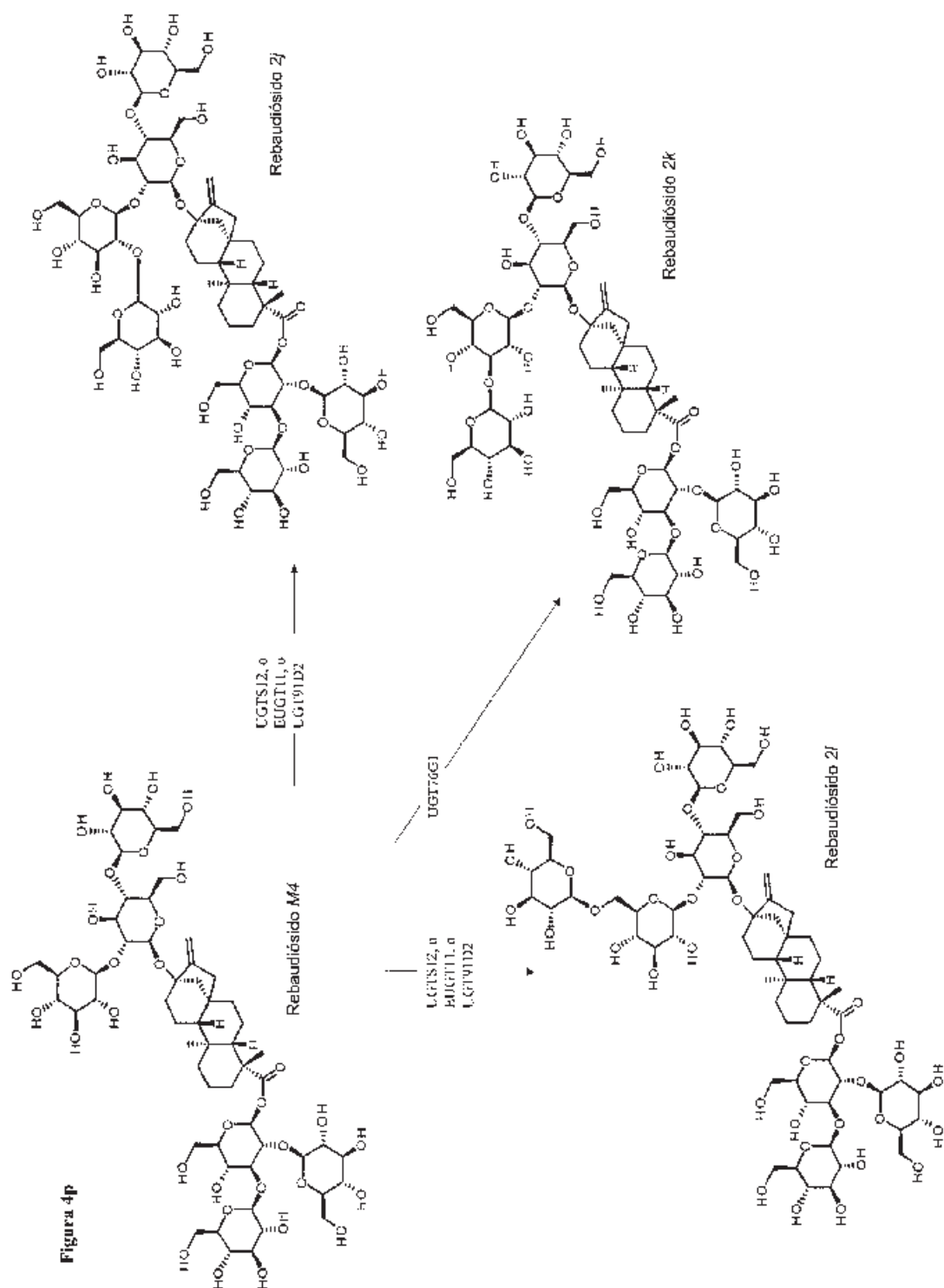


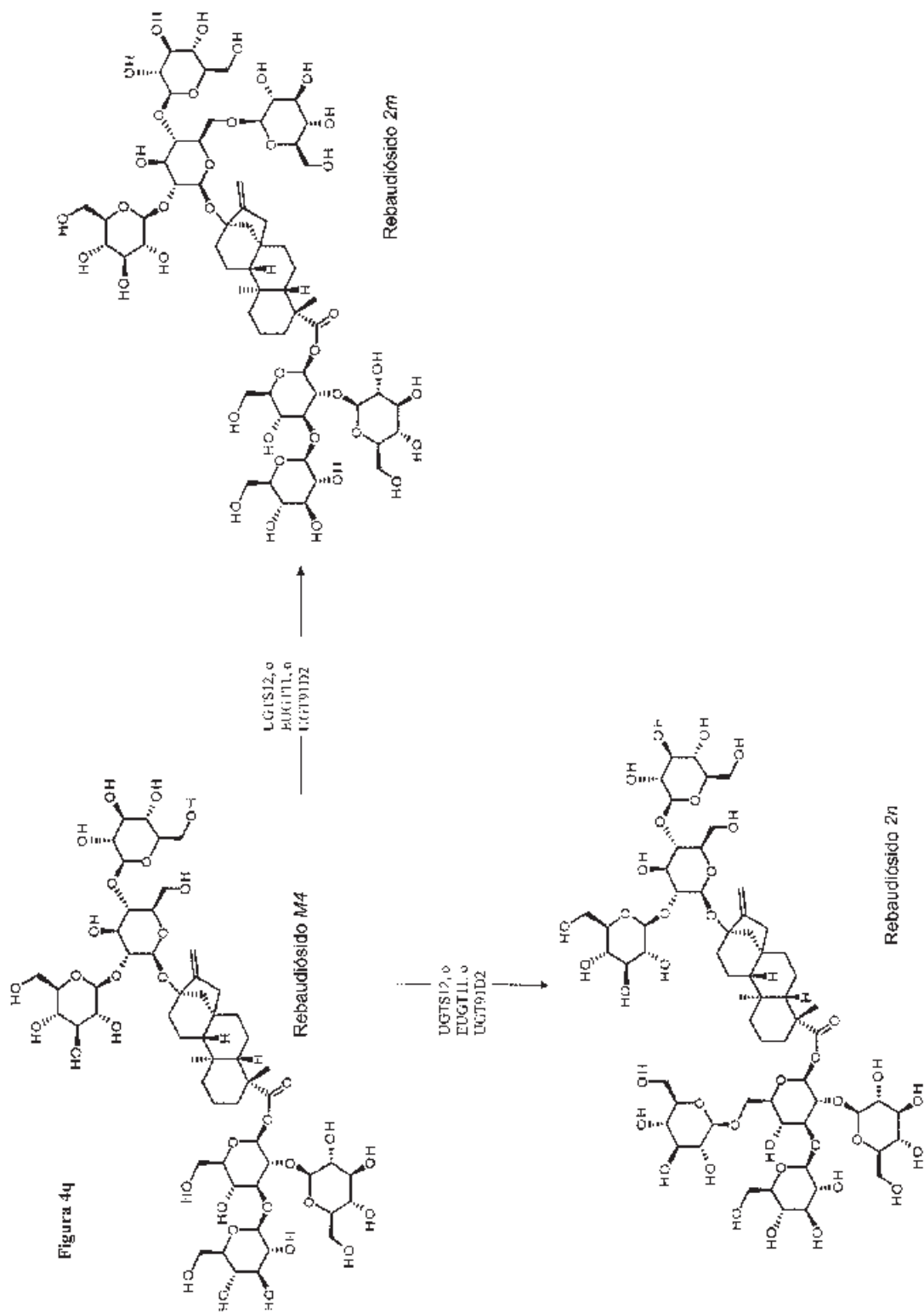


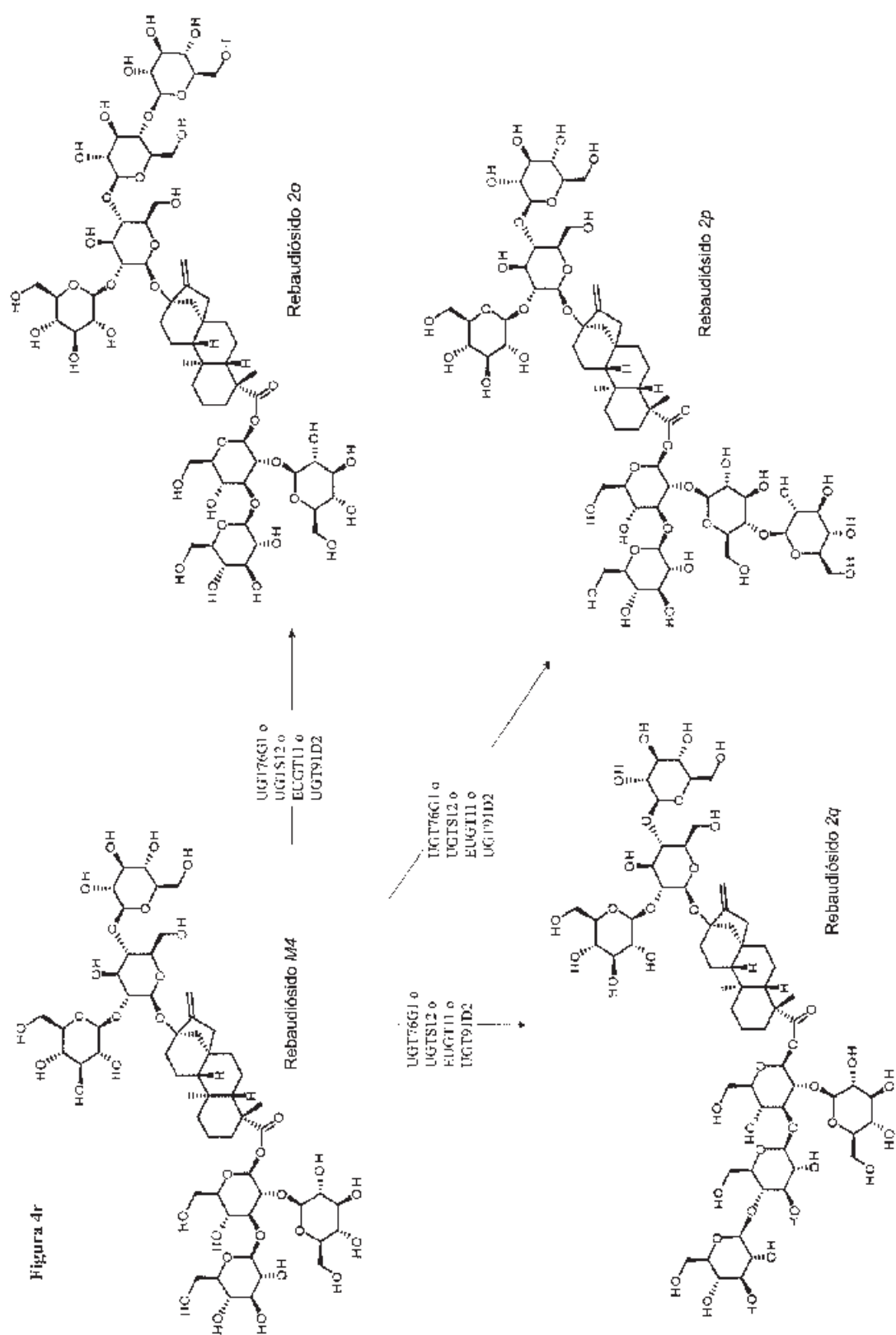


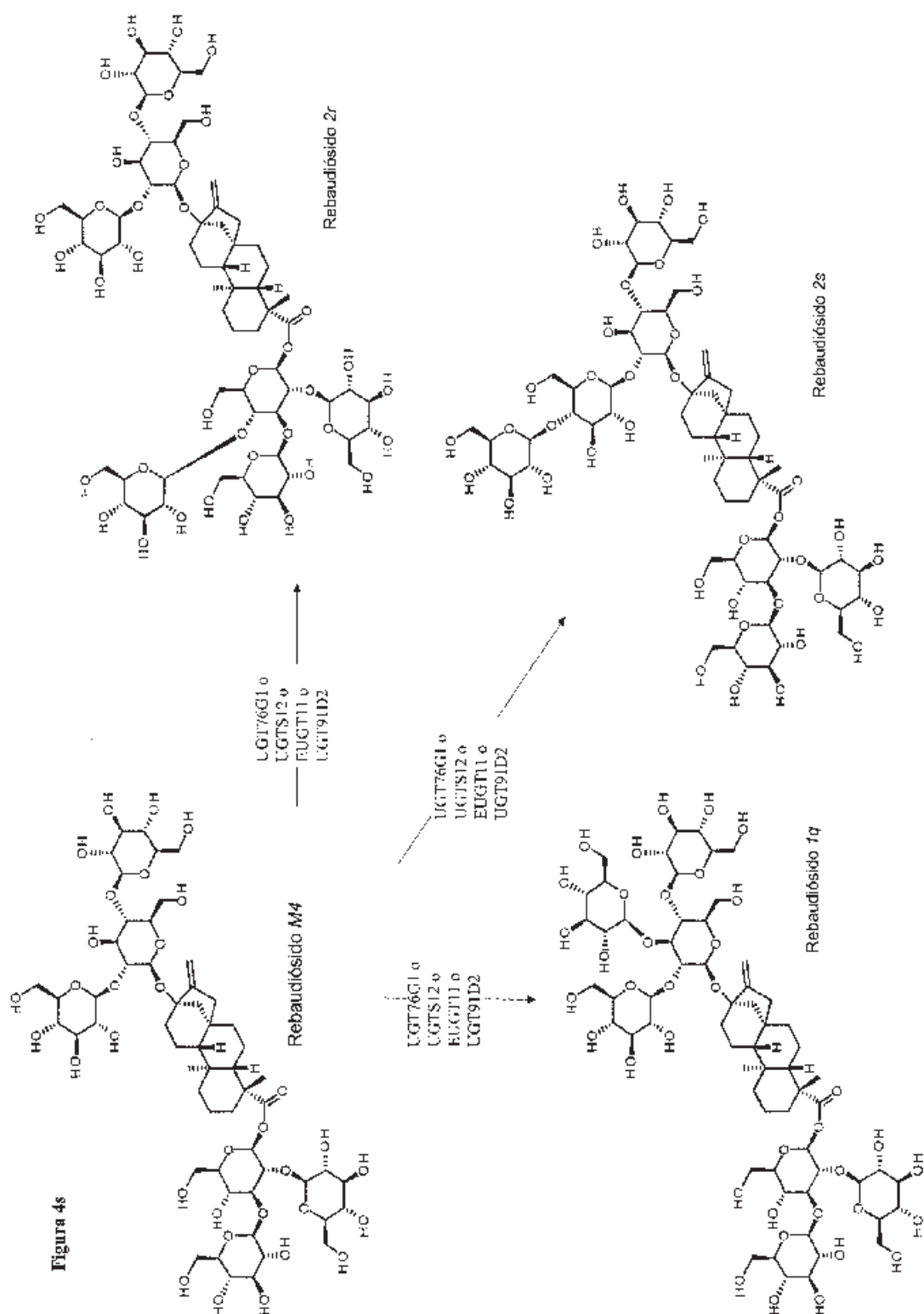












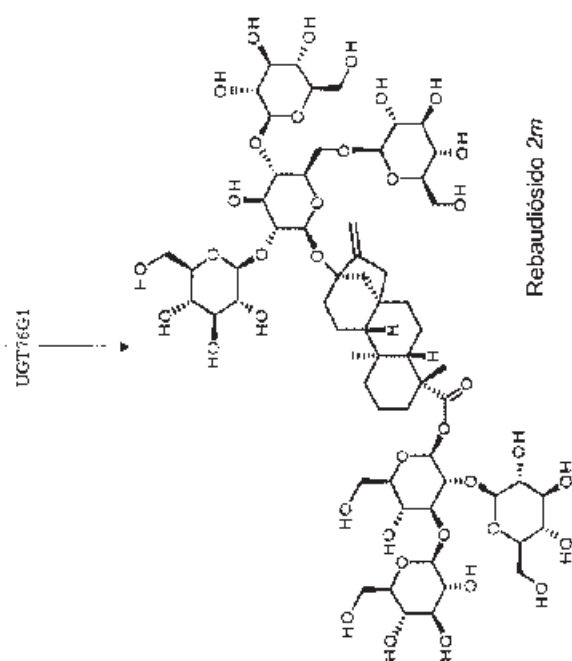
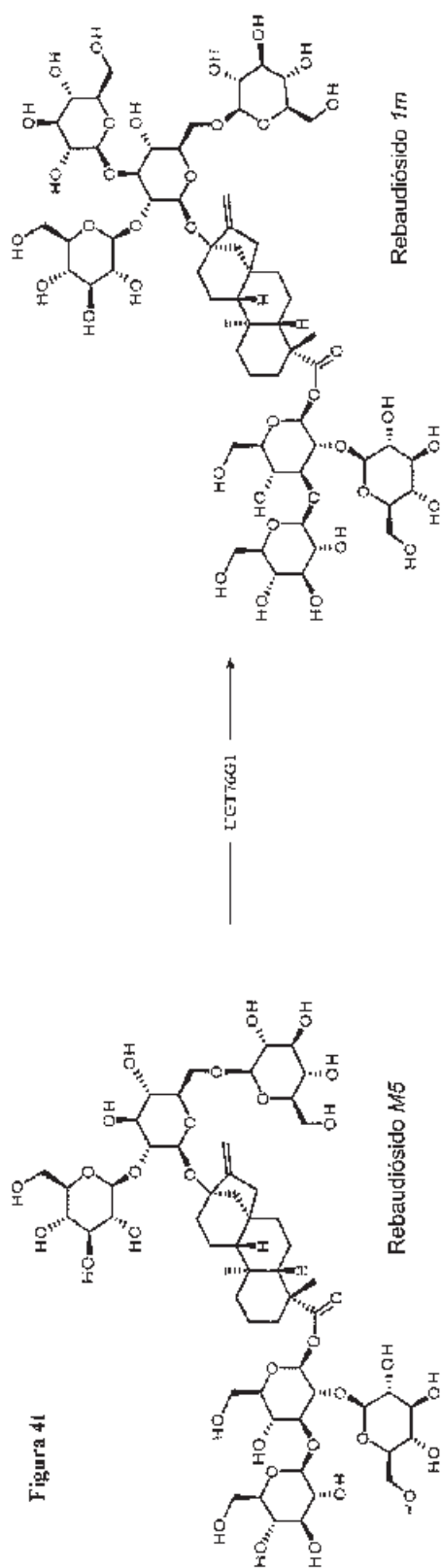


Figura 5a

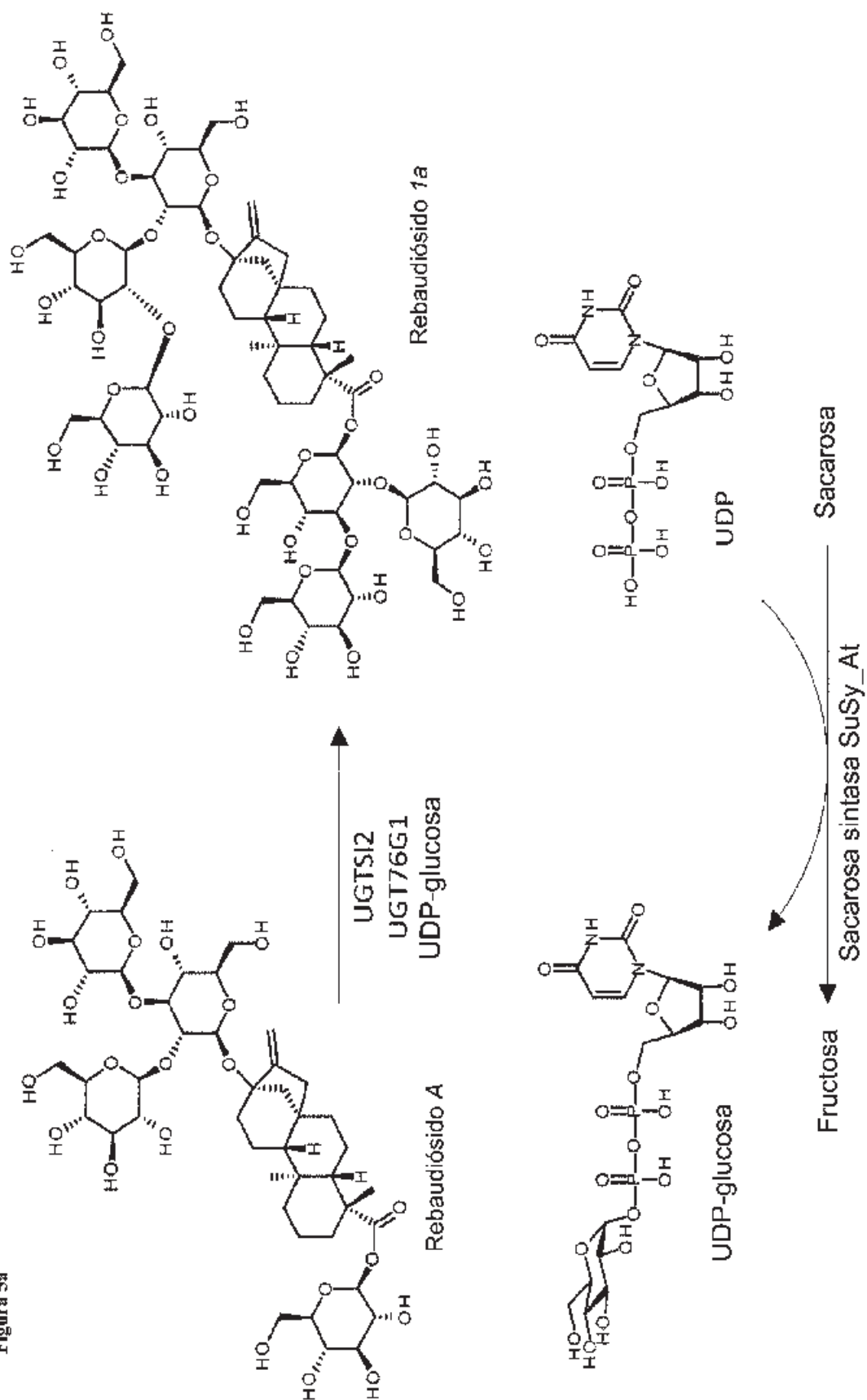


Figura 5b

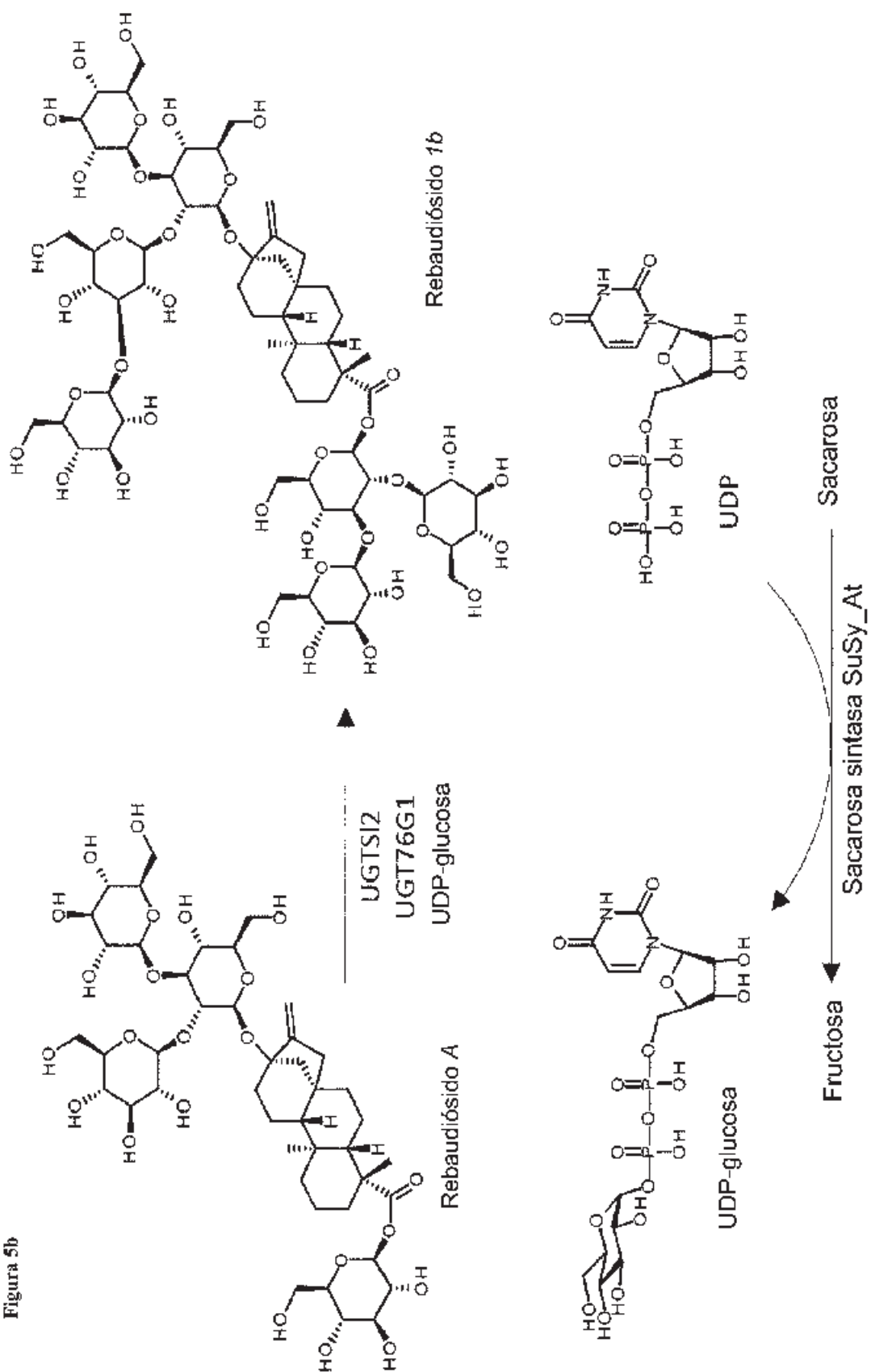


Figura 5c

Rebaudiósido A

UGT5I2
UGT76G1
UDP-glucosa

Rebaudiósido 1c

UDP-glucosa

Fructosa

Sacarosa sintasa SuSy_At

Sacarosa

Figura Sd

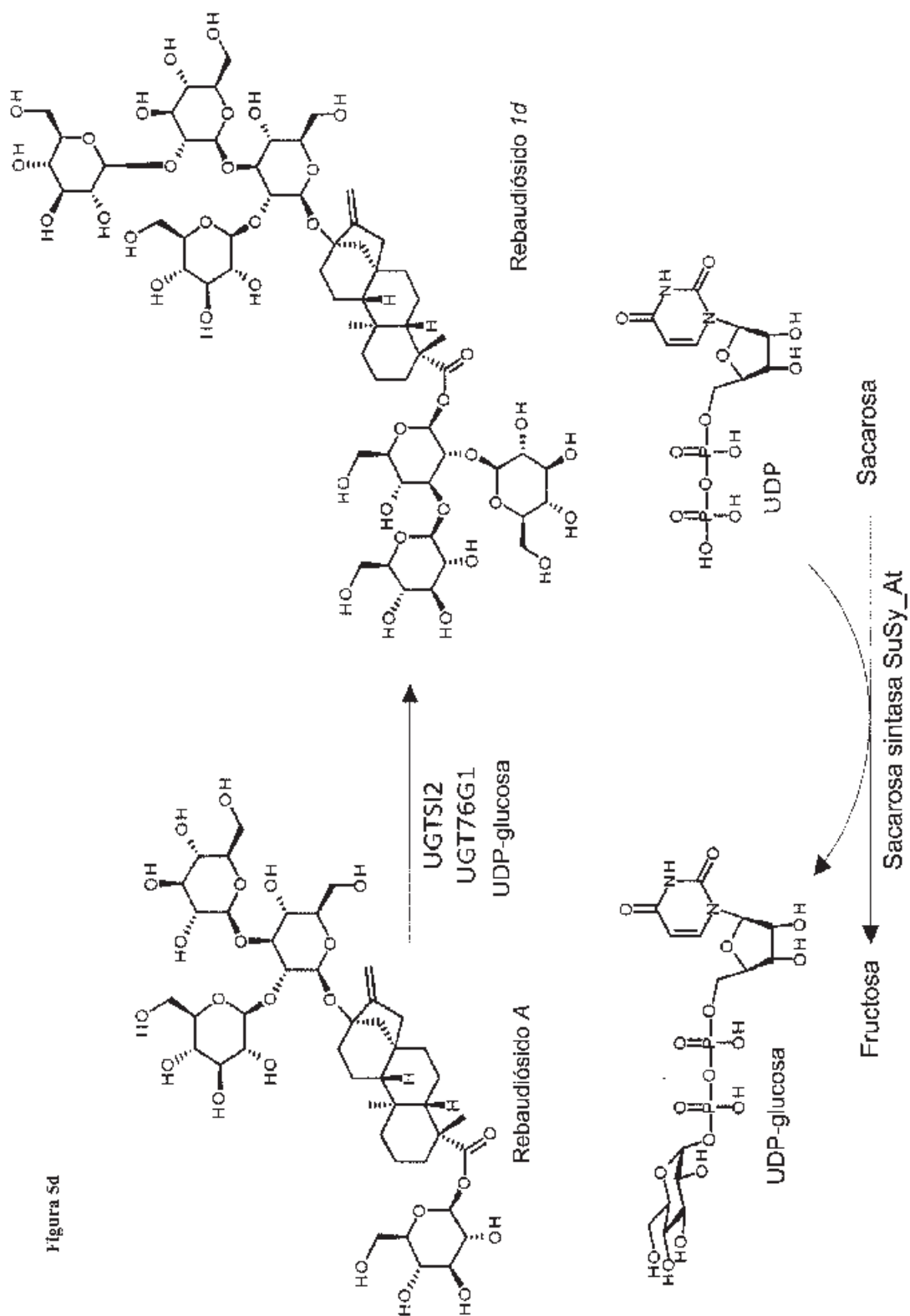


Figura 5c

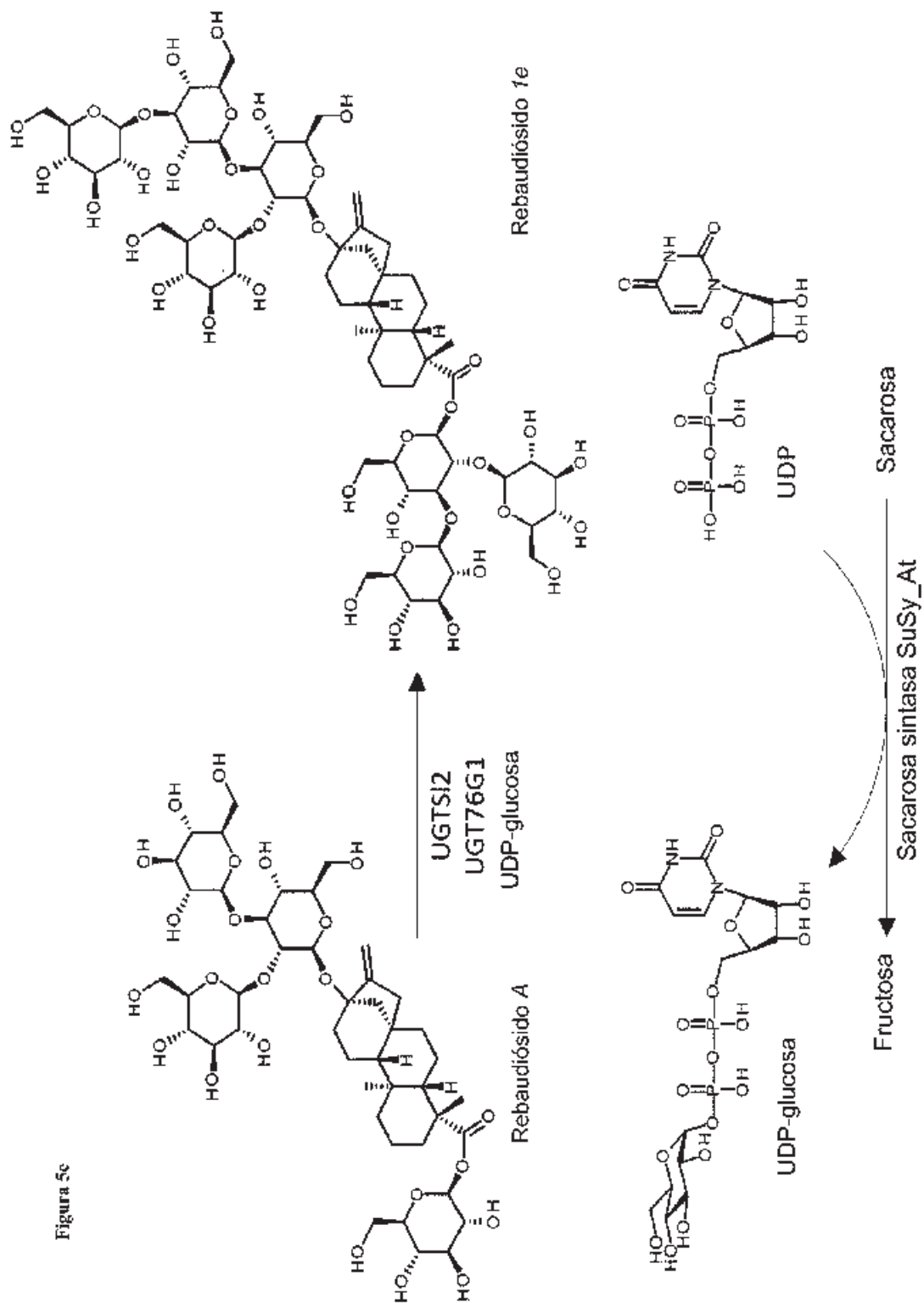
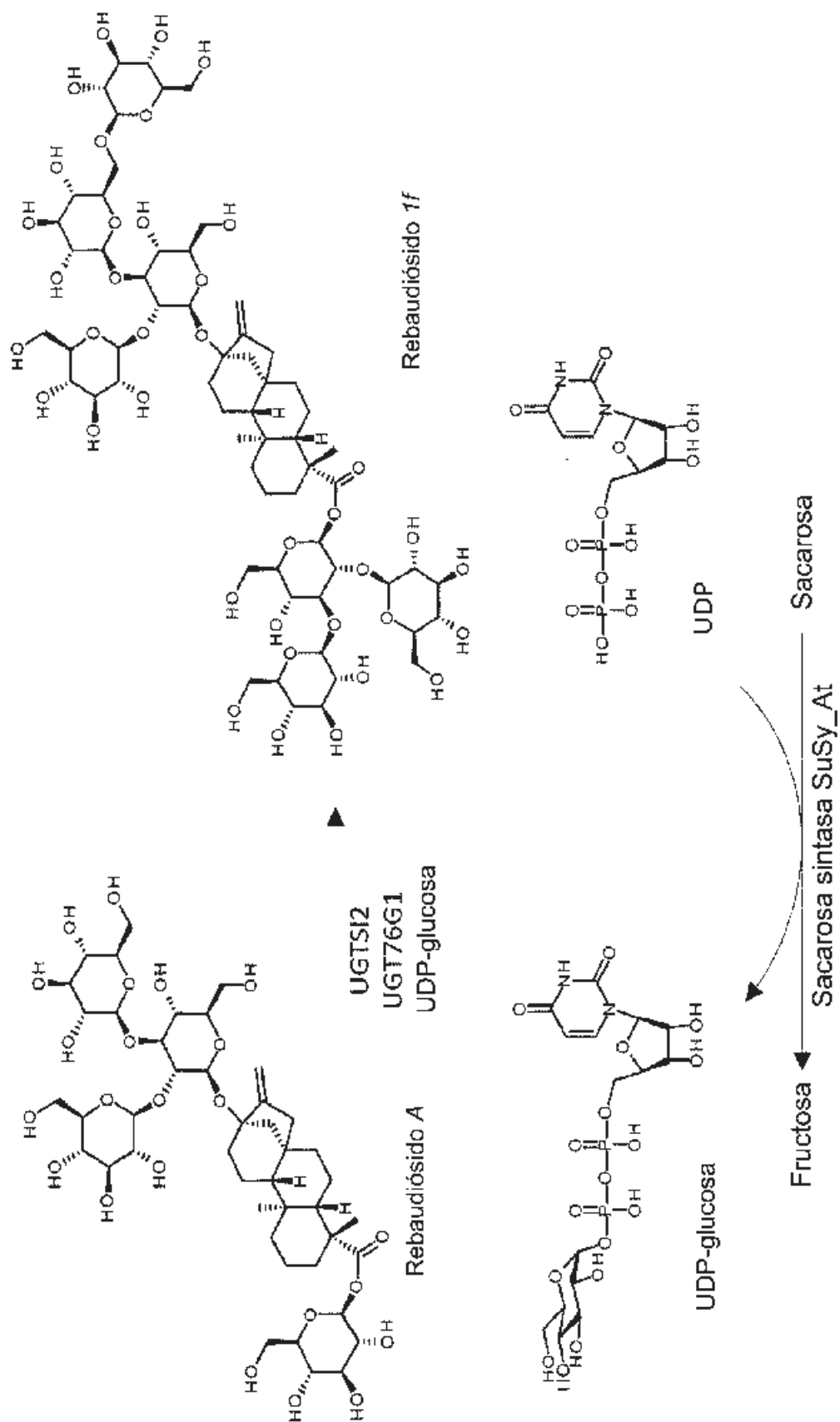
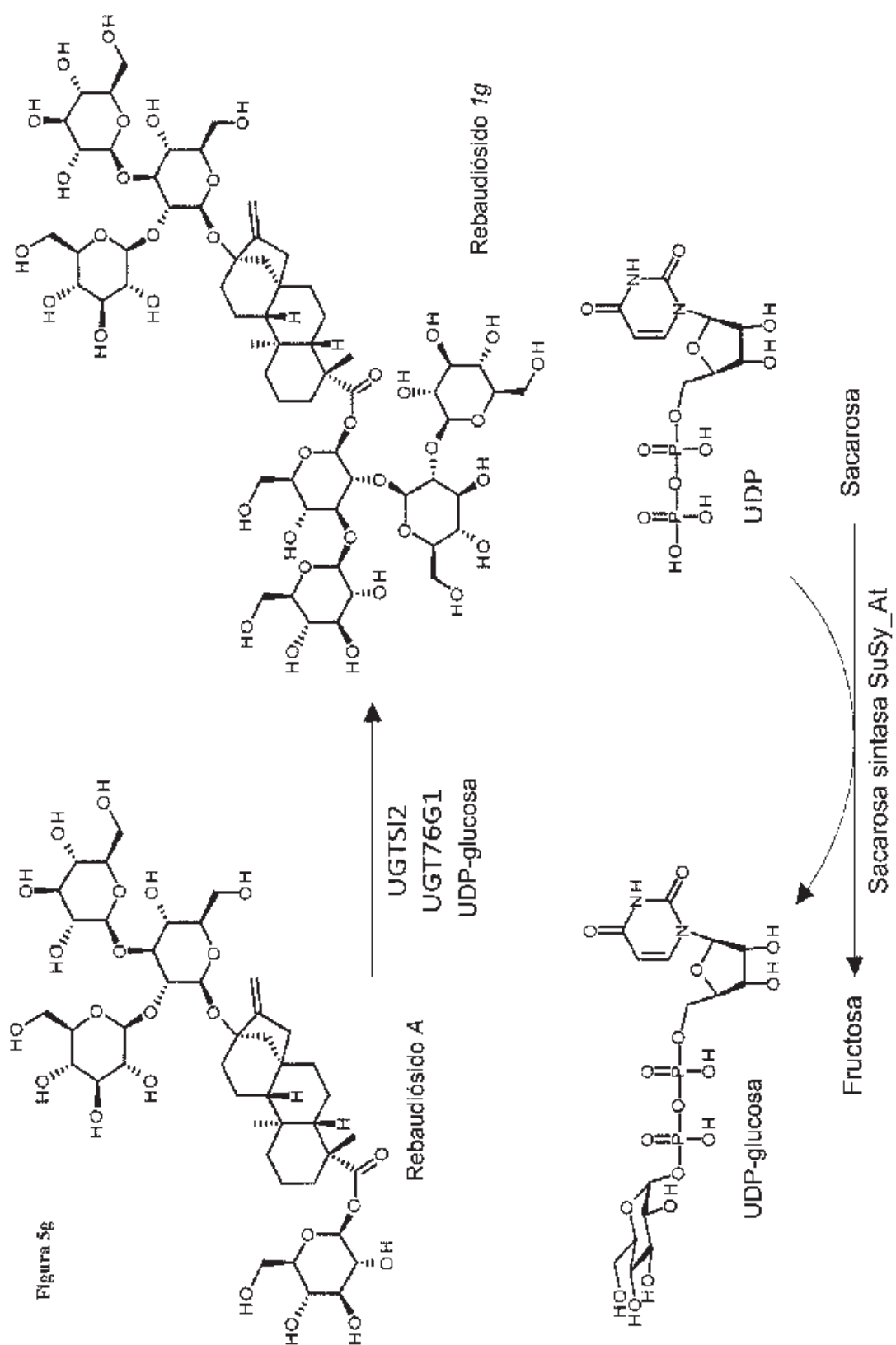
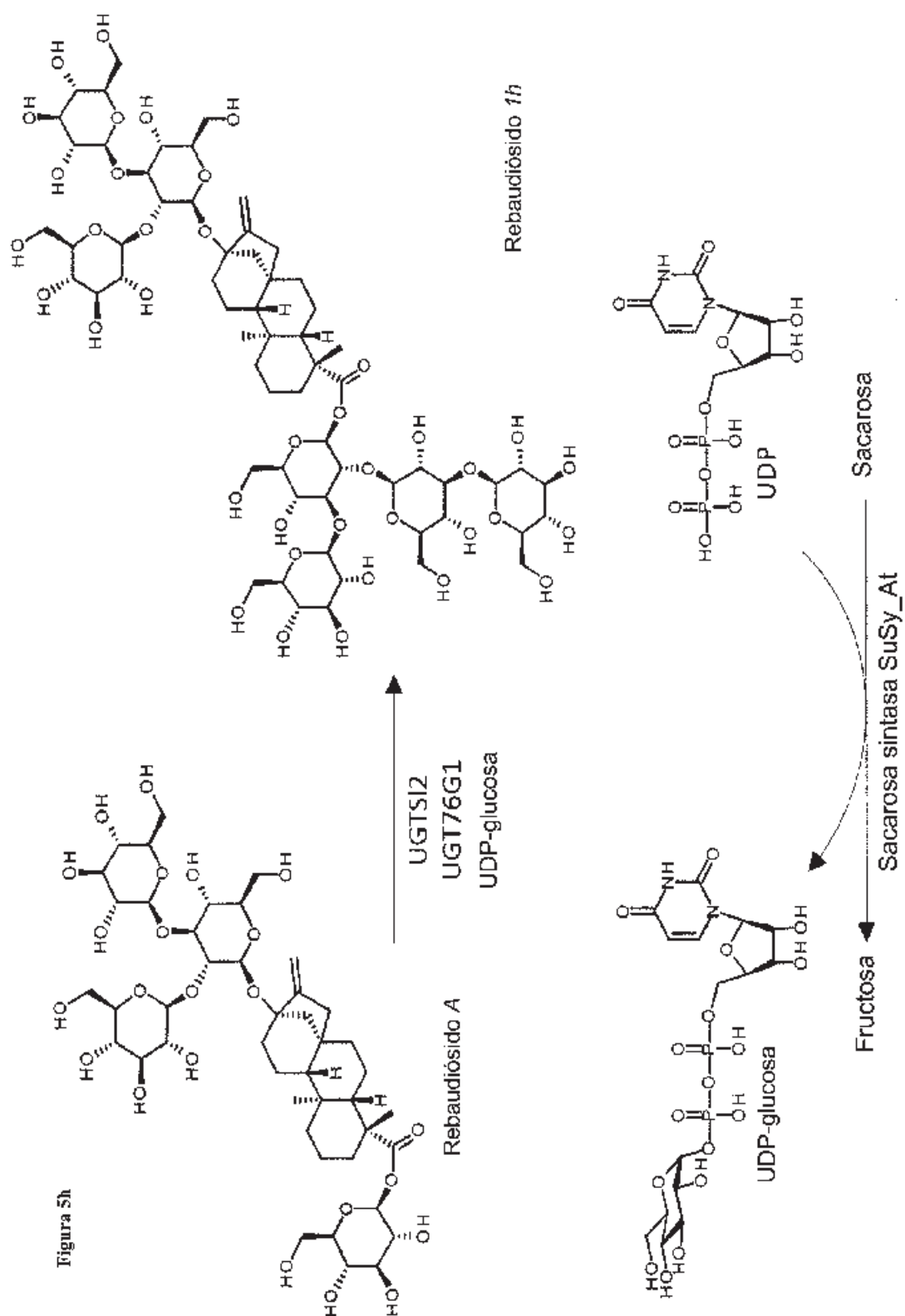


Figura 5f







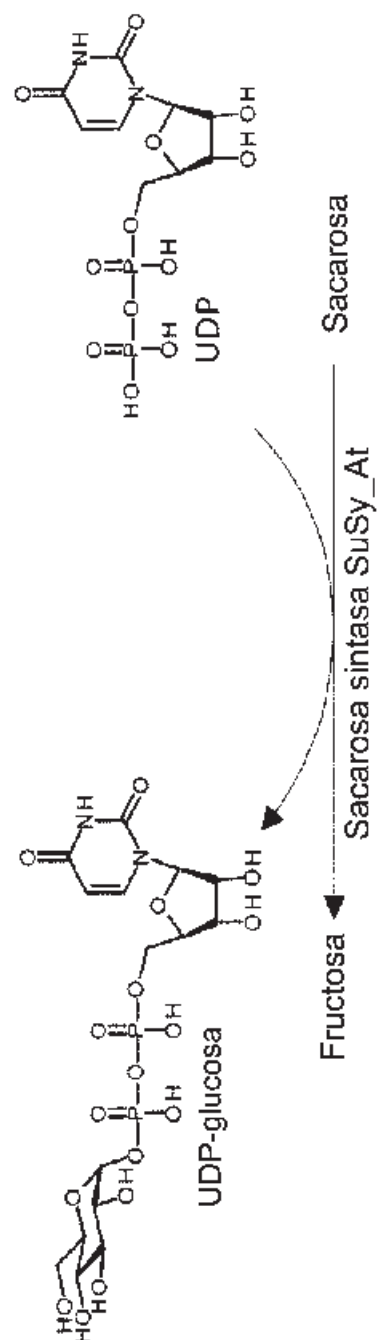
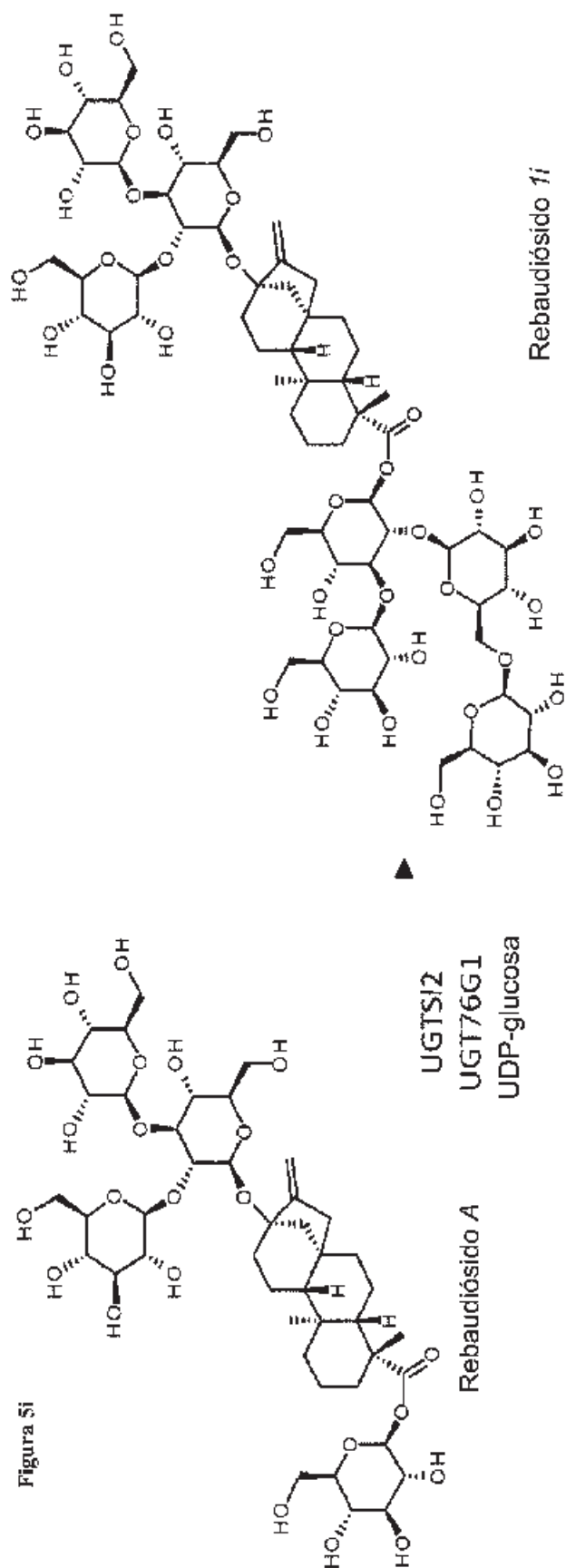


Figura 5j

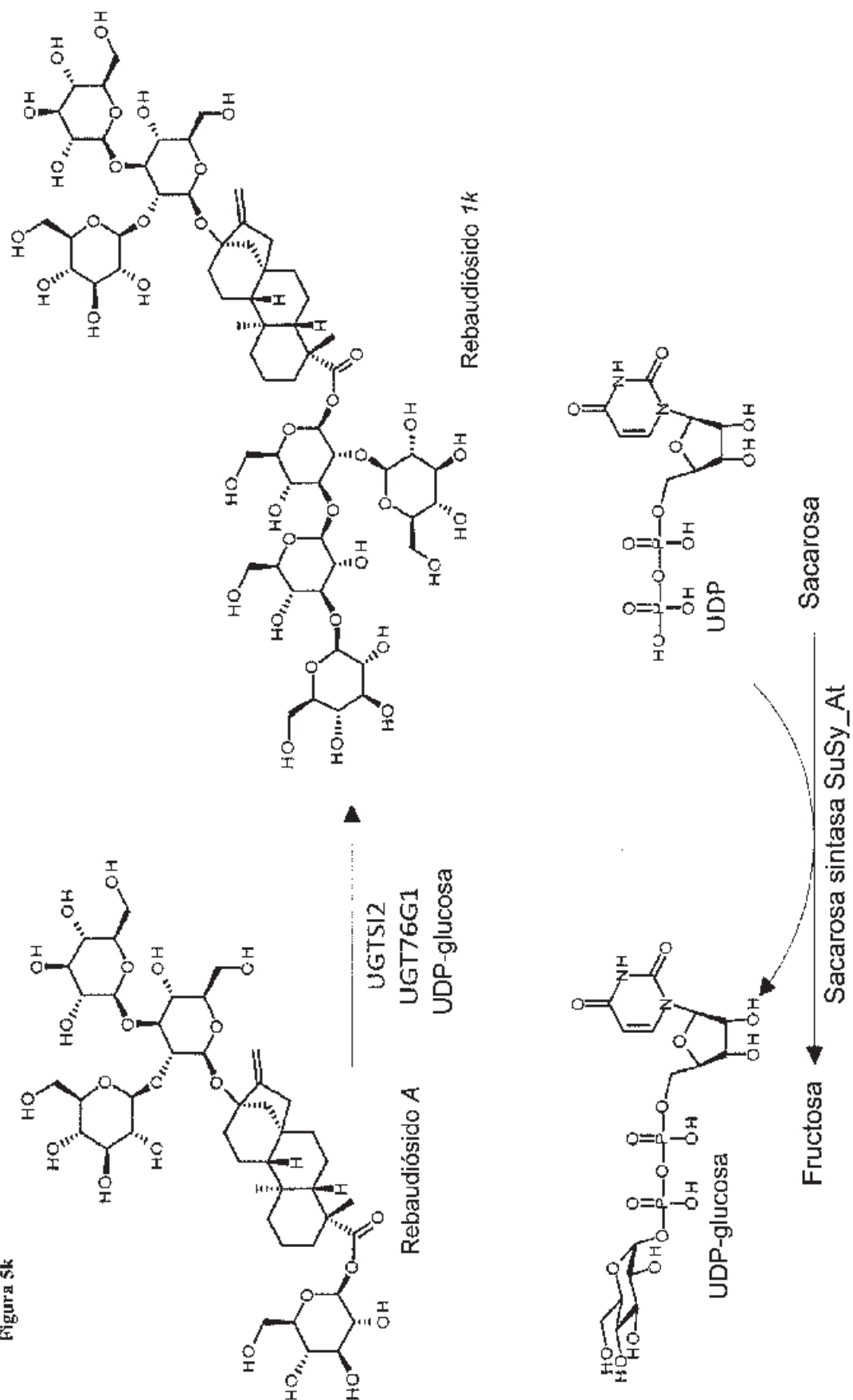
Rebaudiósido A

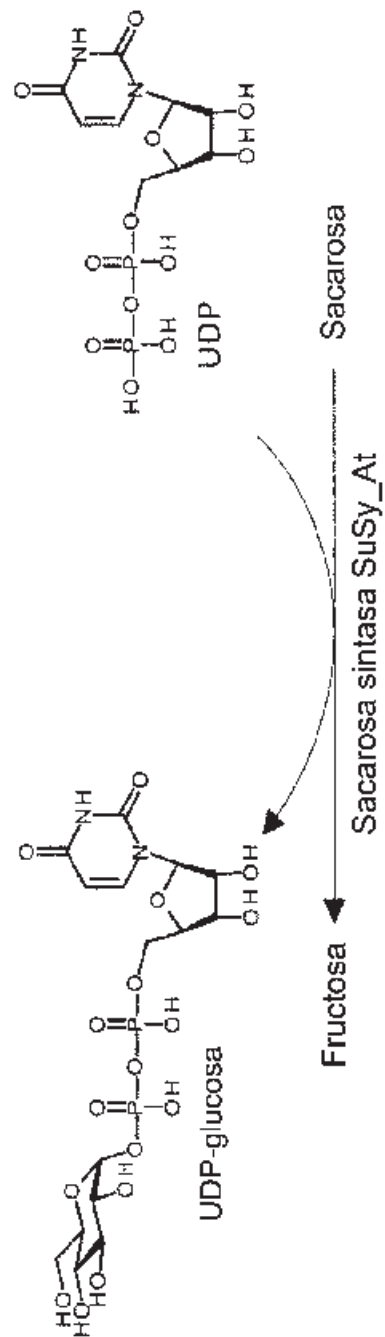
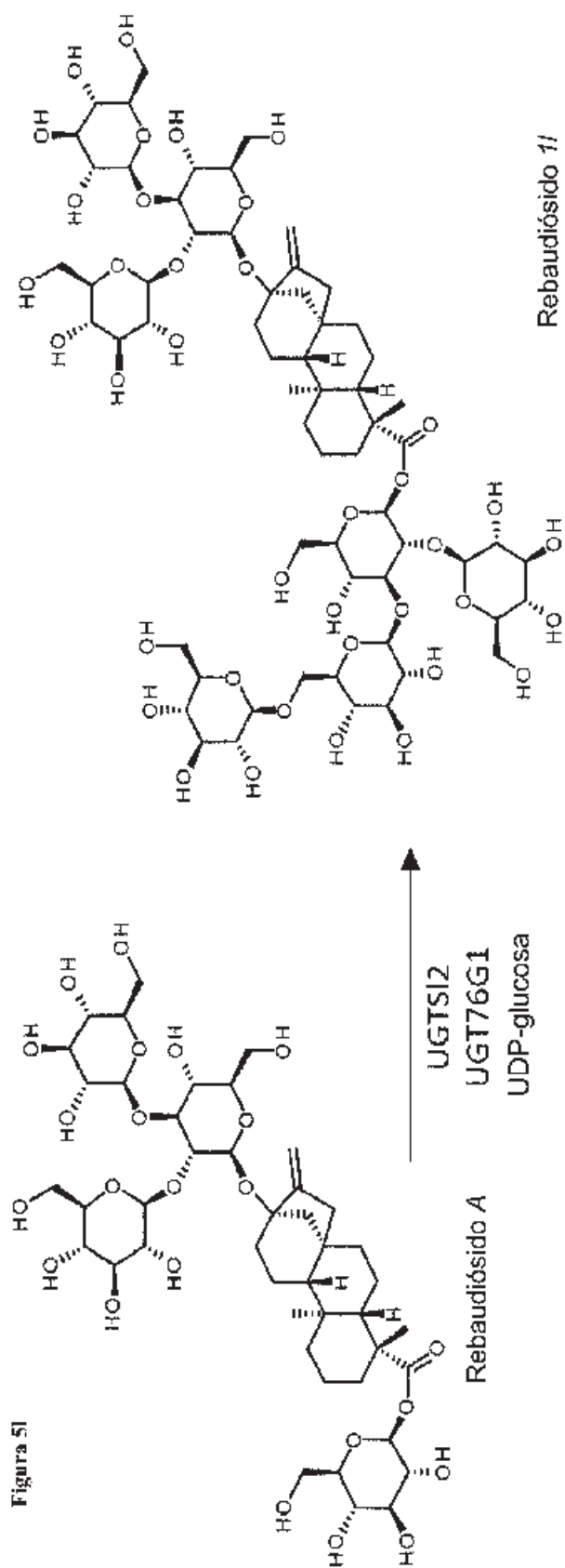
UGT76G1
UDP-glucosa

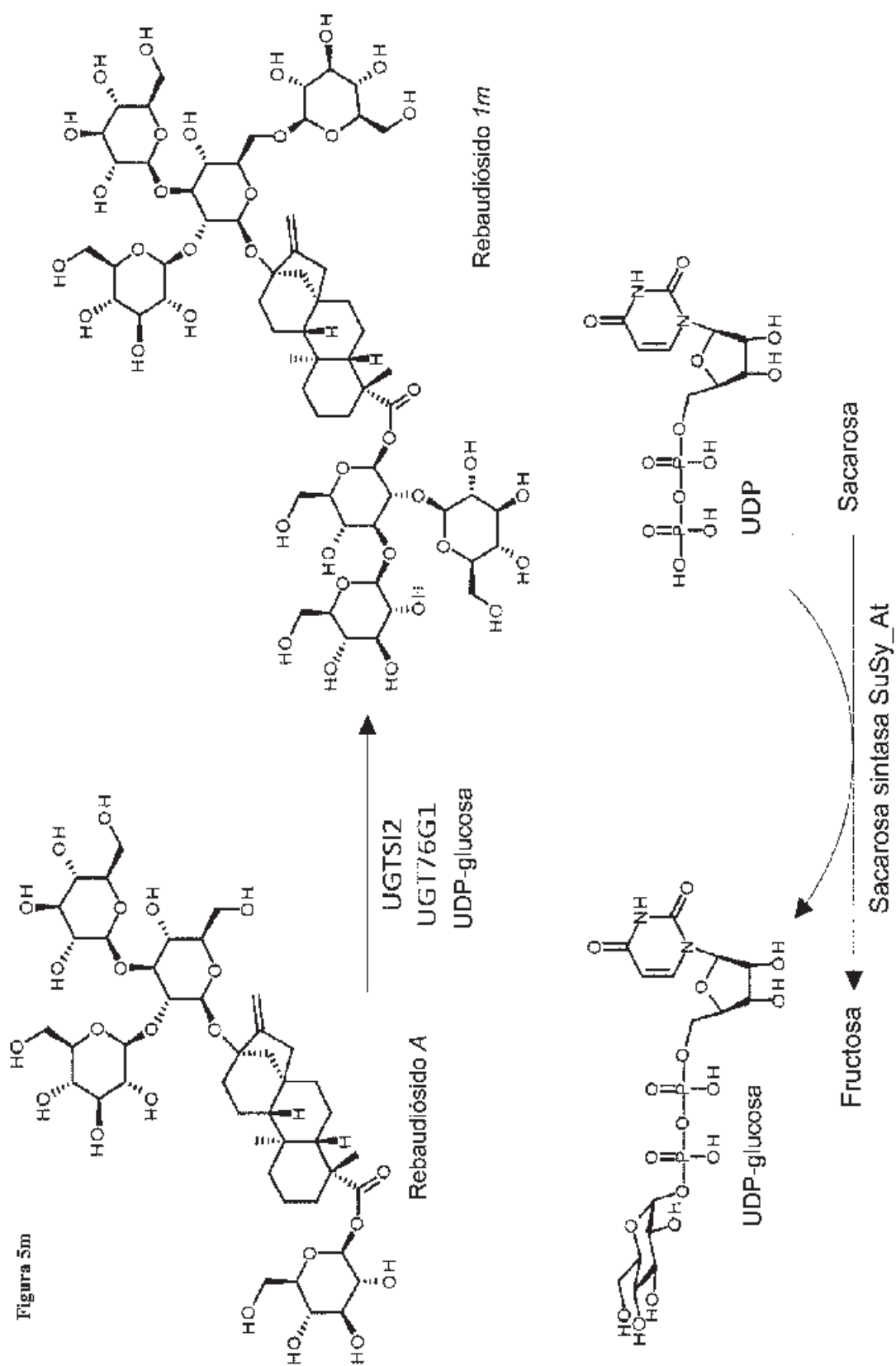
Rebaudiósido 1j

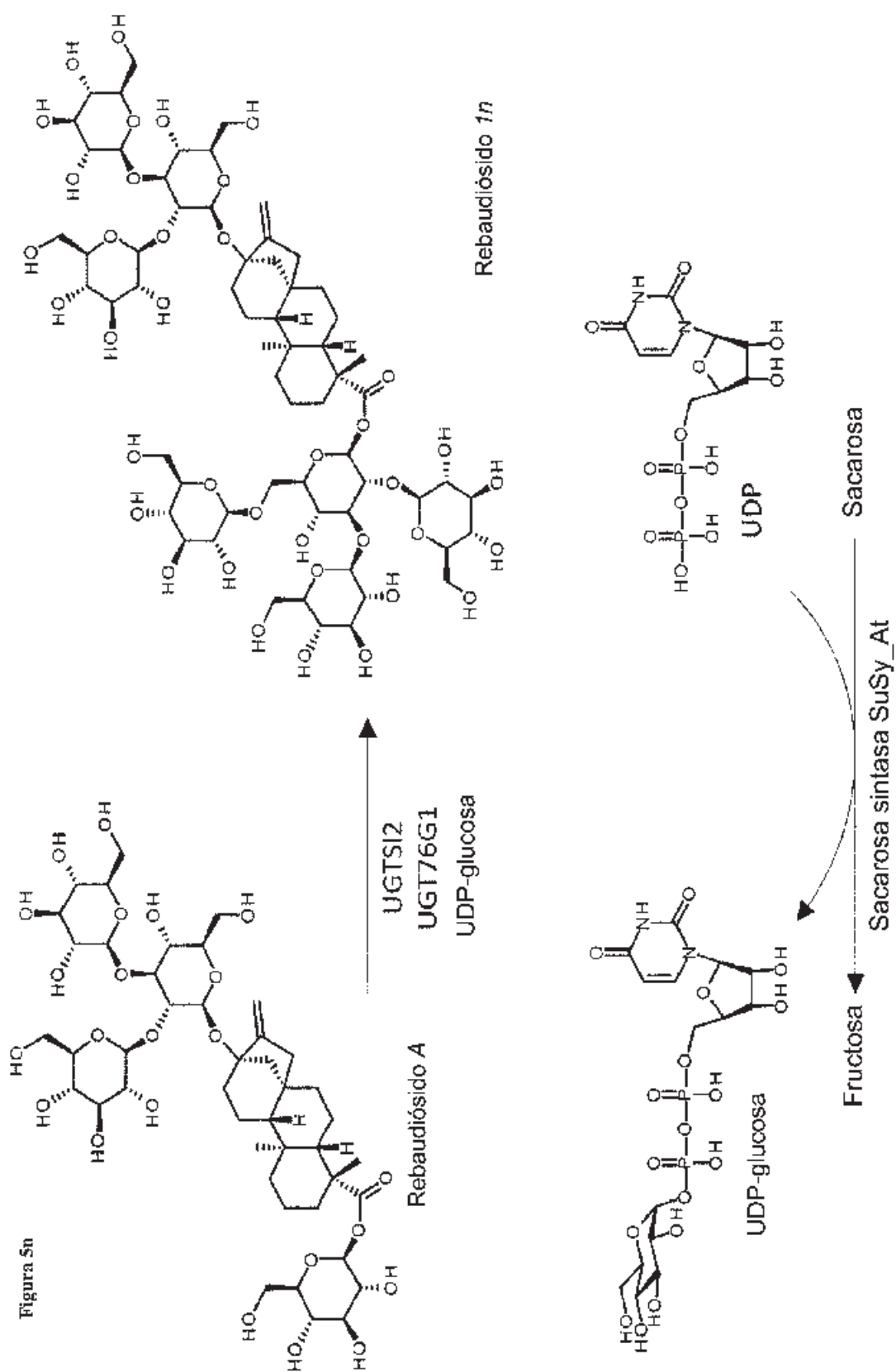


Figura 5k









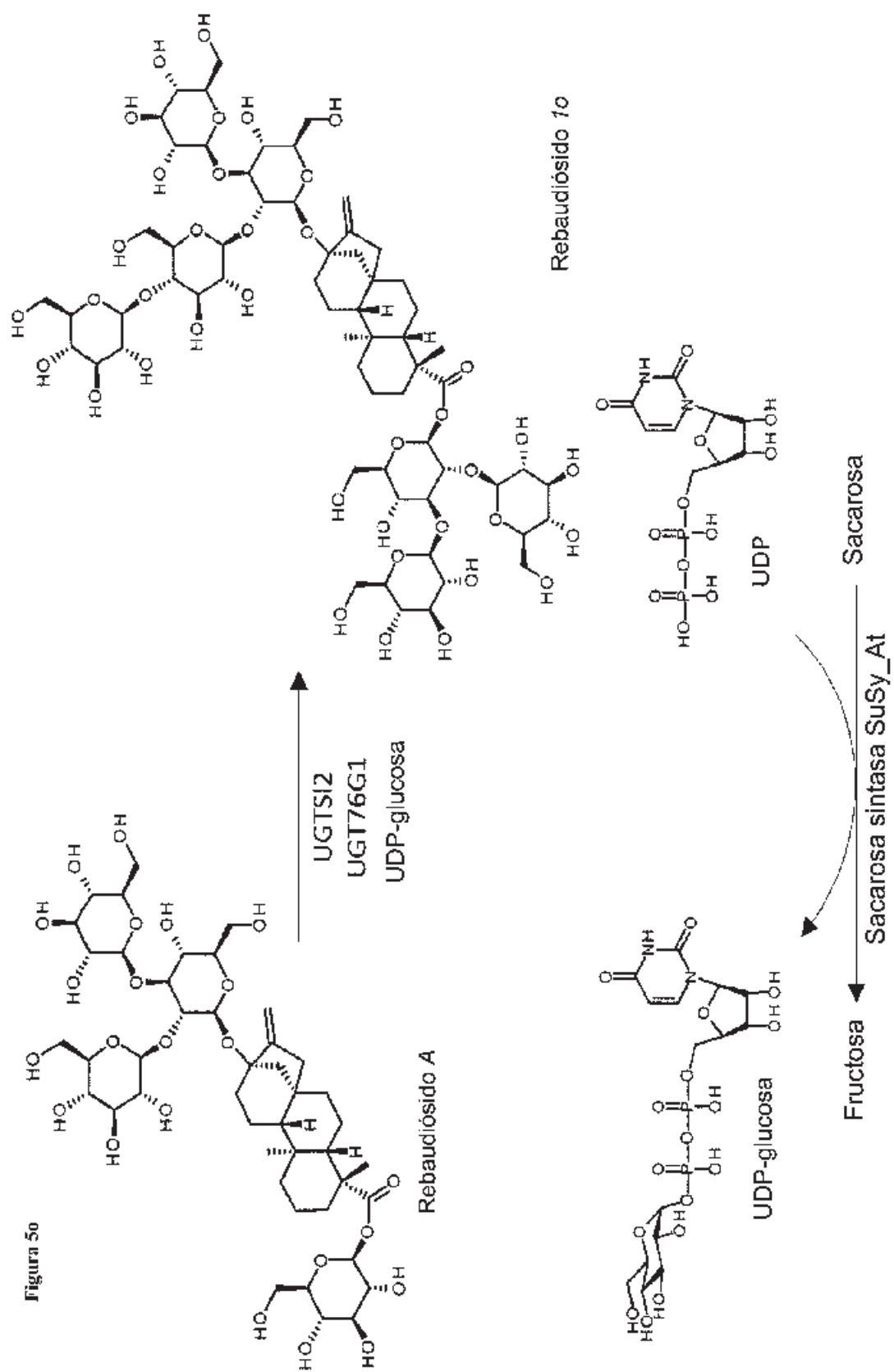


Figura 5p

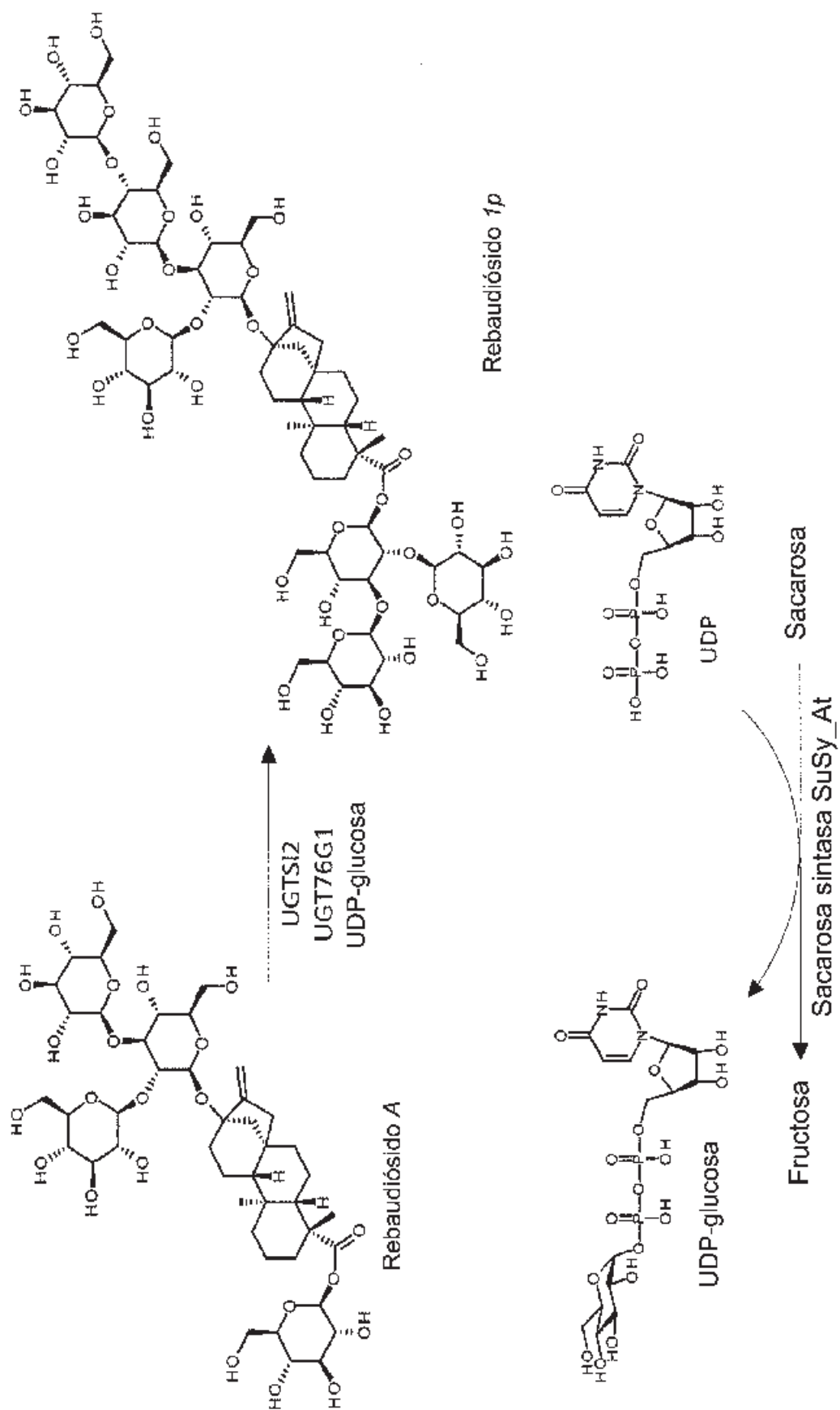
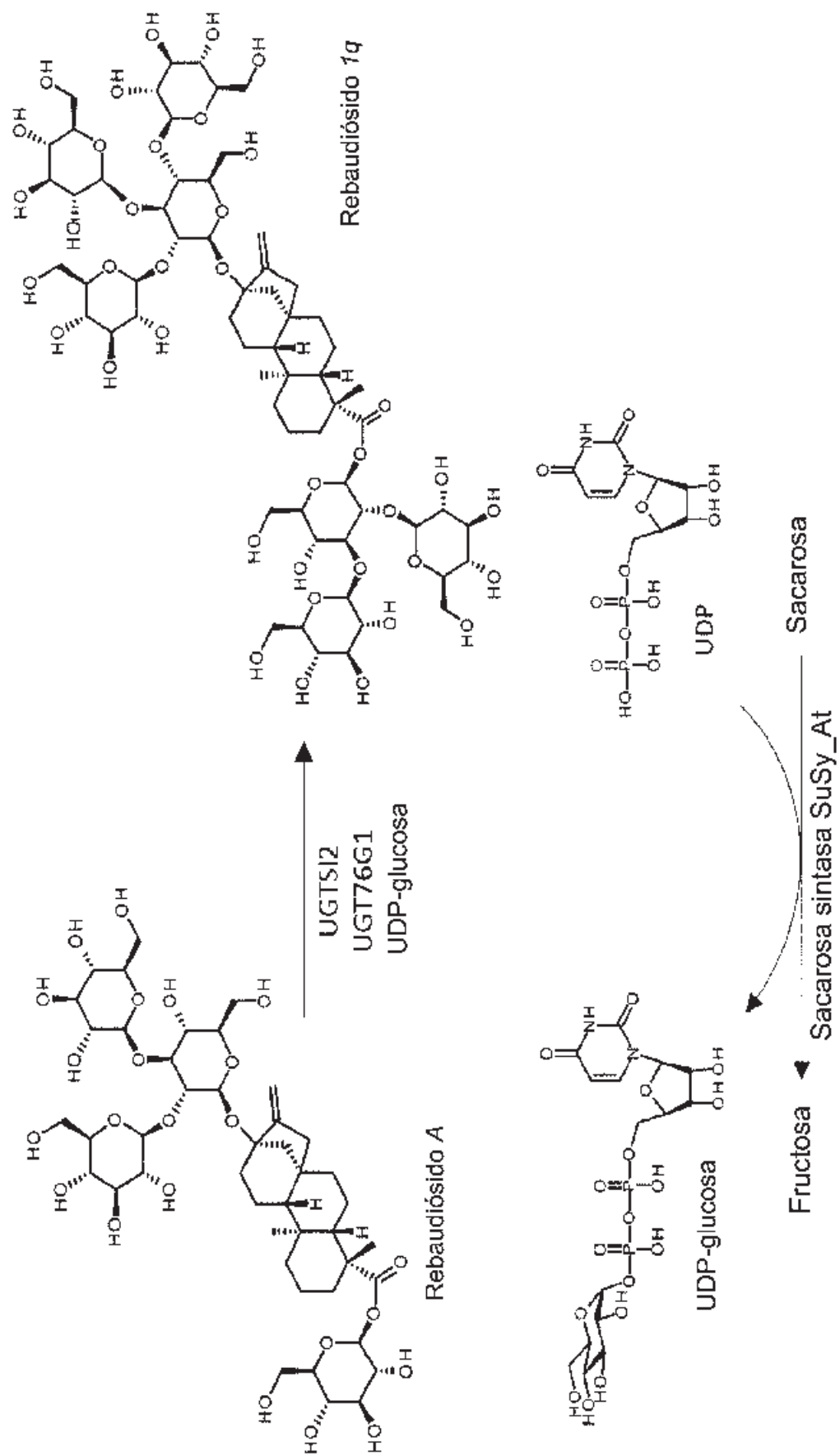


Figura 5q



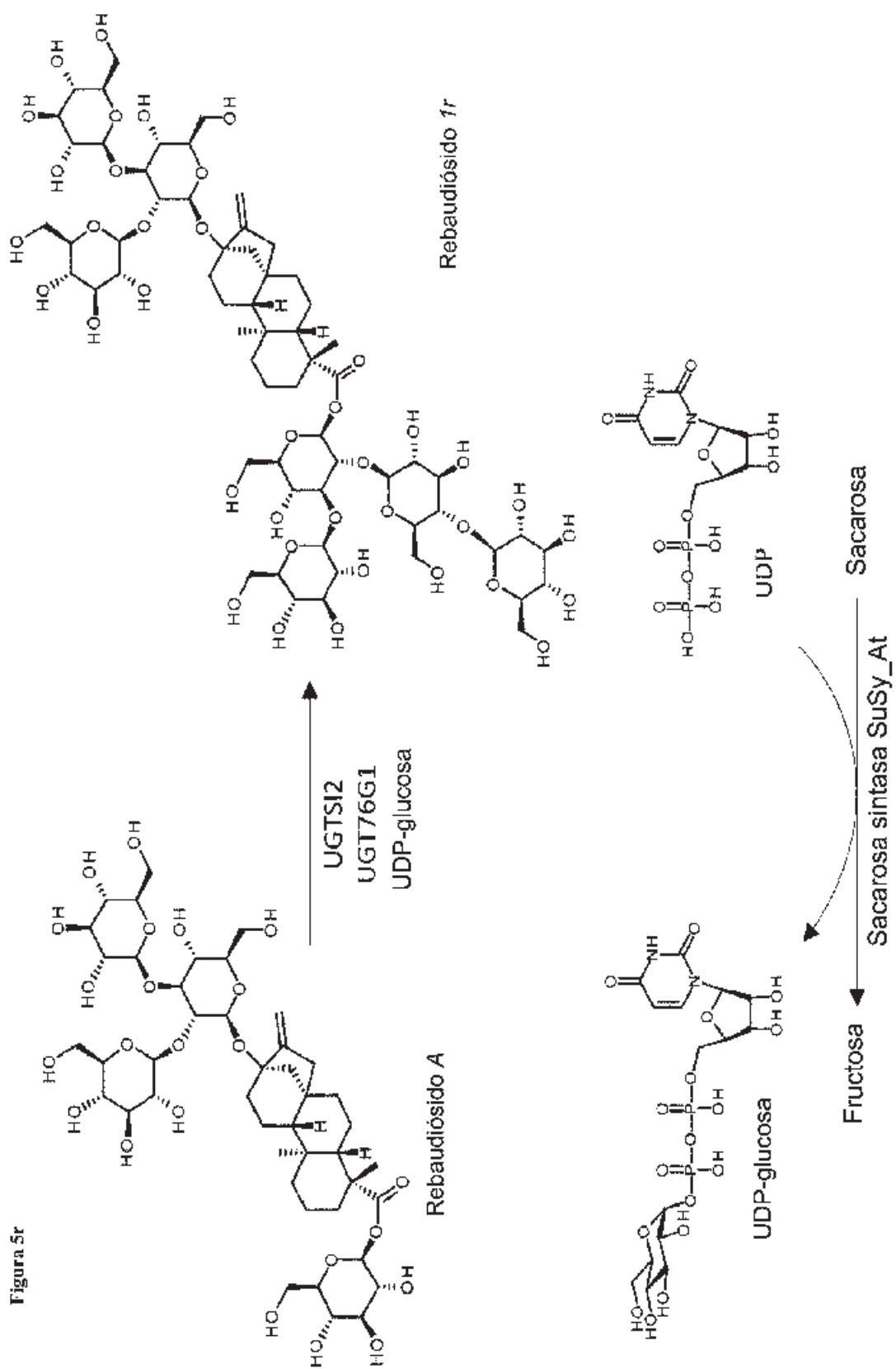


Figura 5s

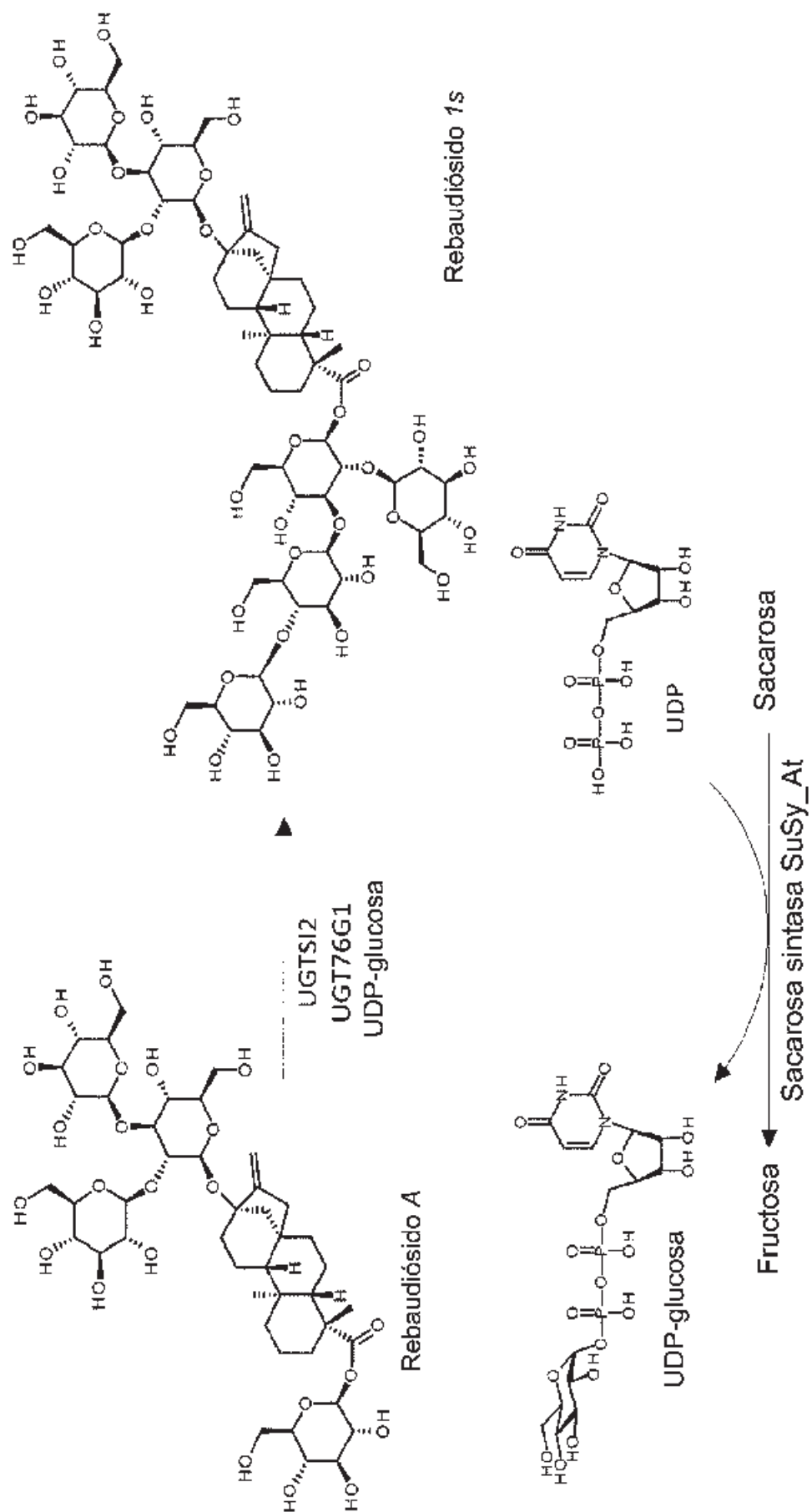


Figura 5t

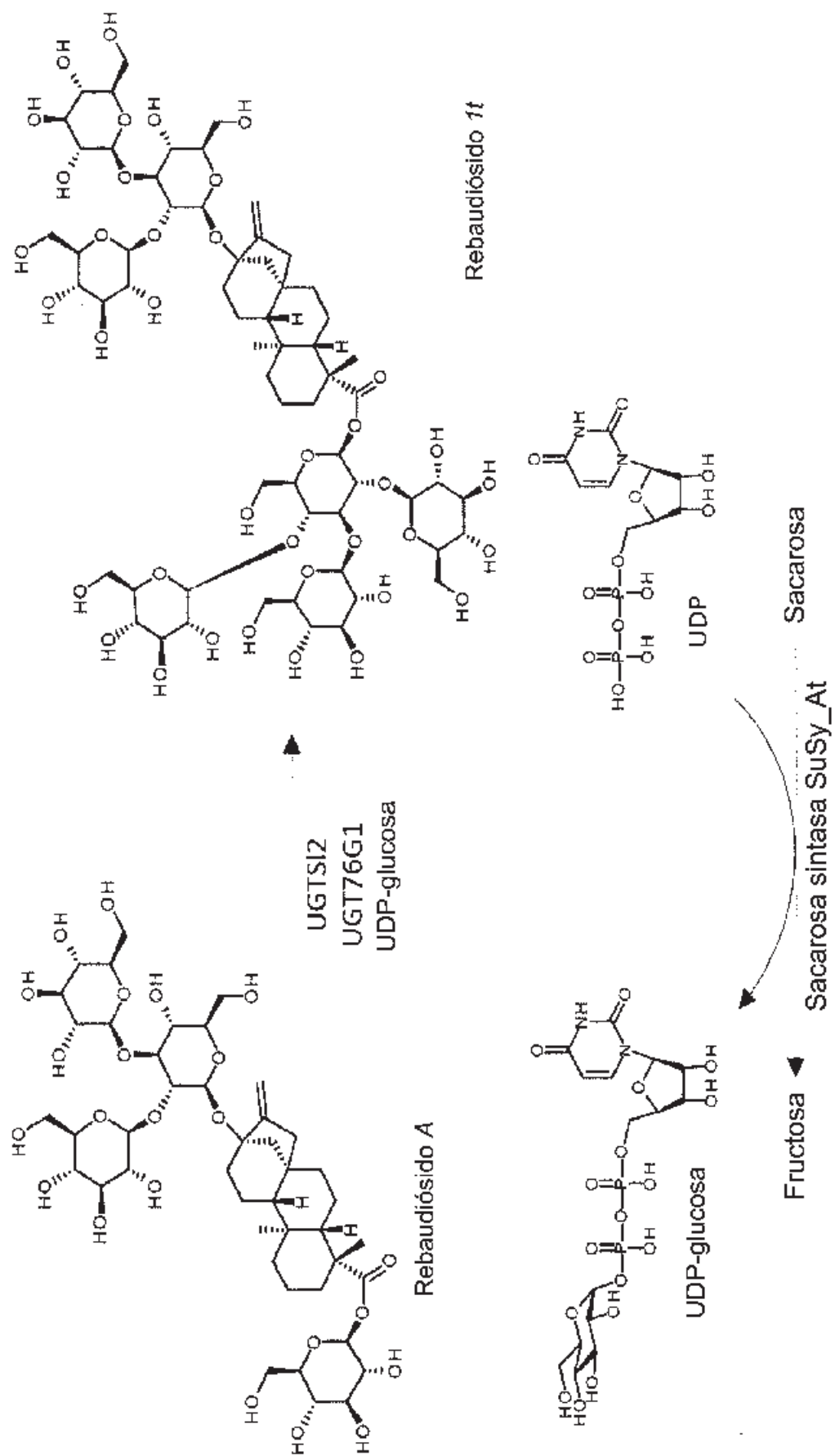


Figura 6a

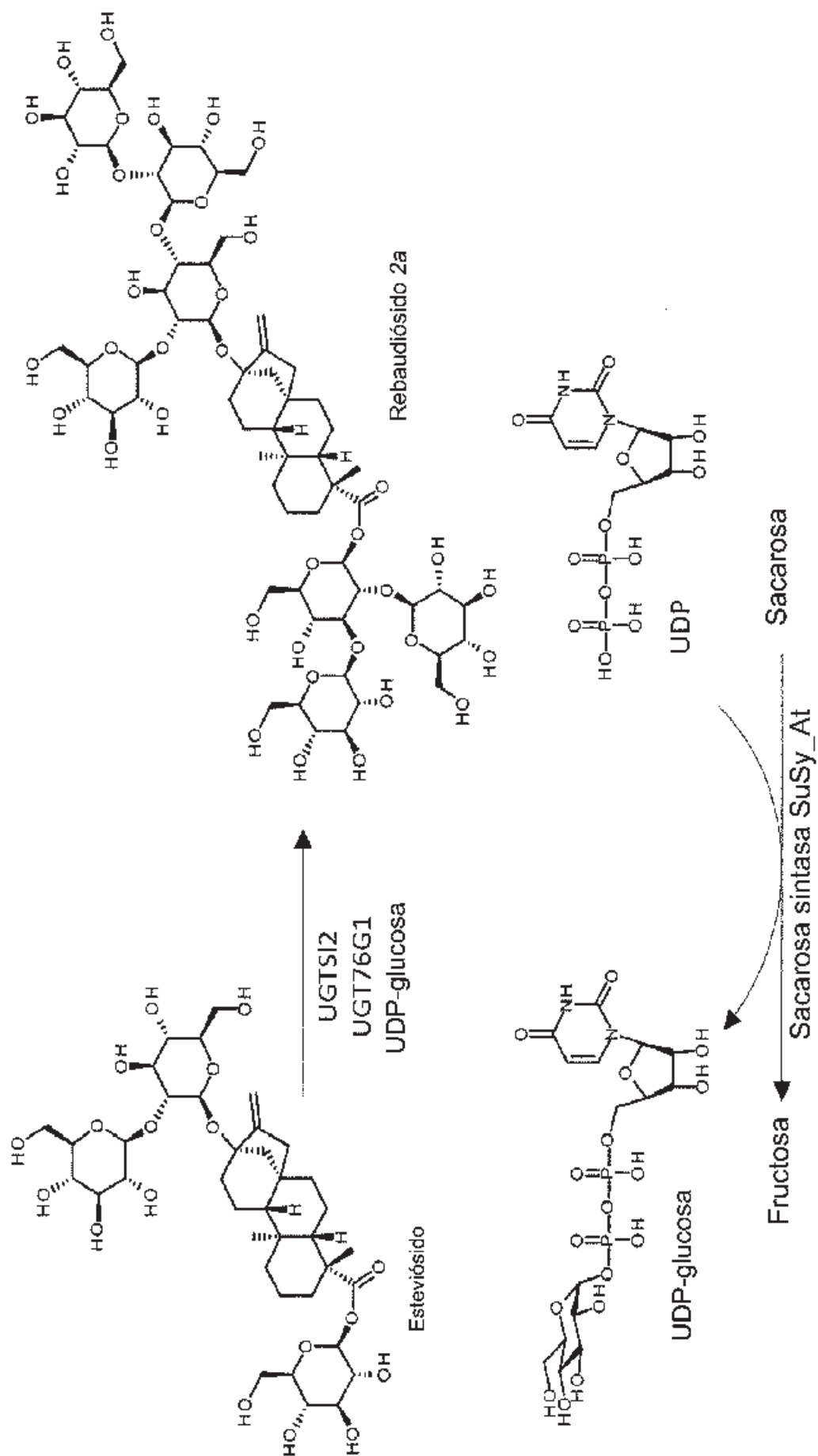


Figura 6b

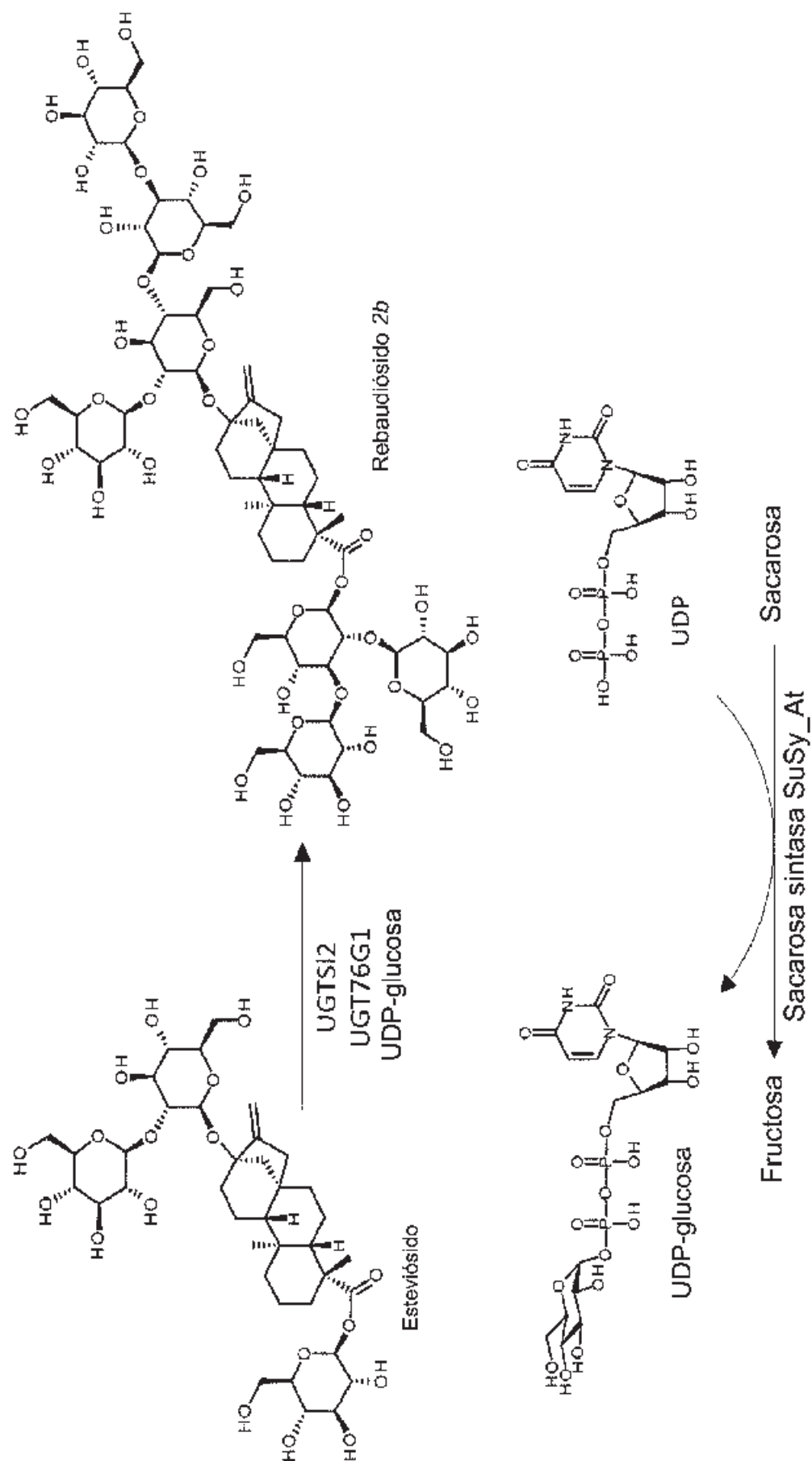


Figura 6c

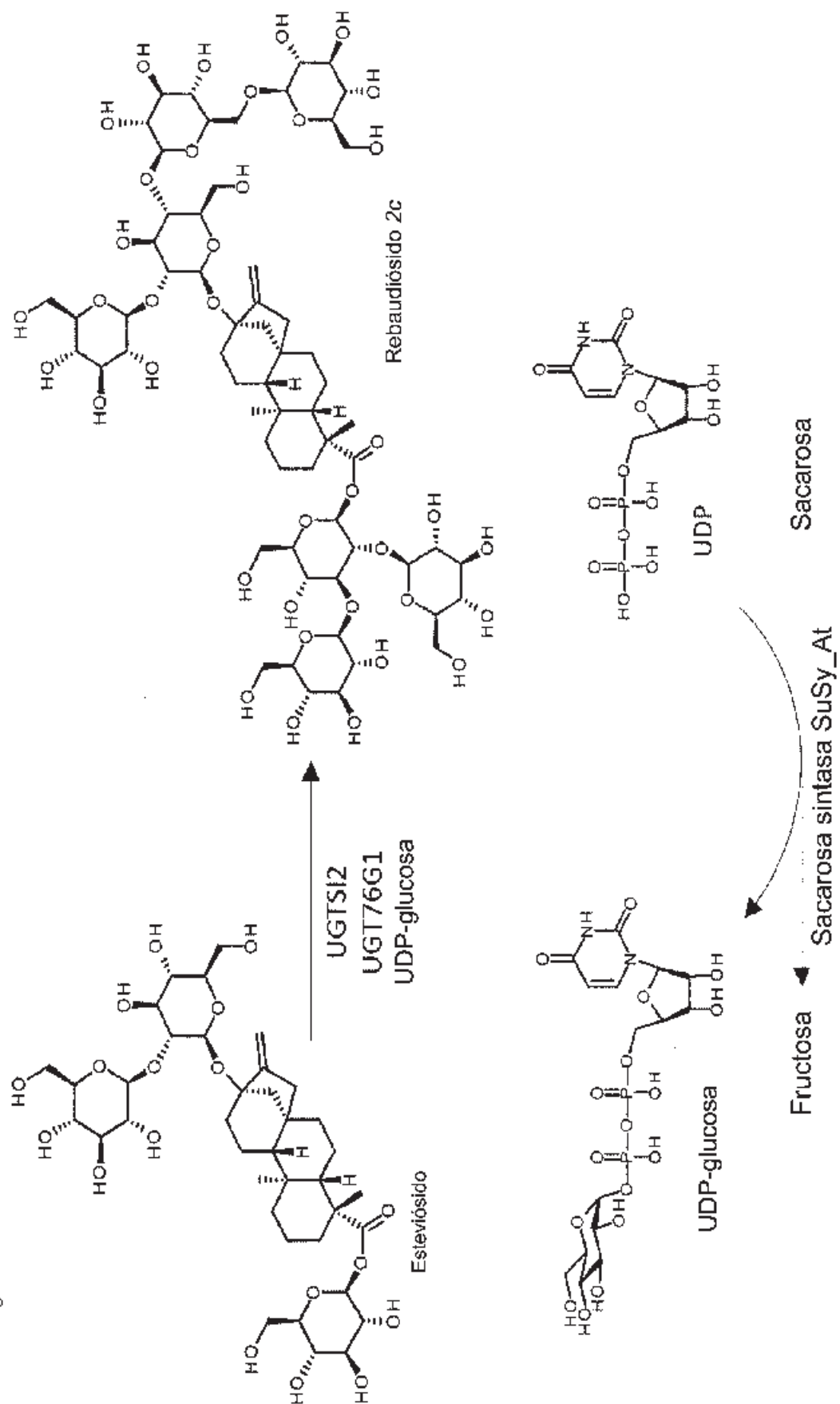


Figura 6d

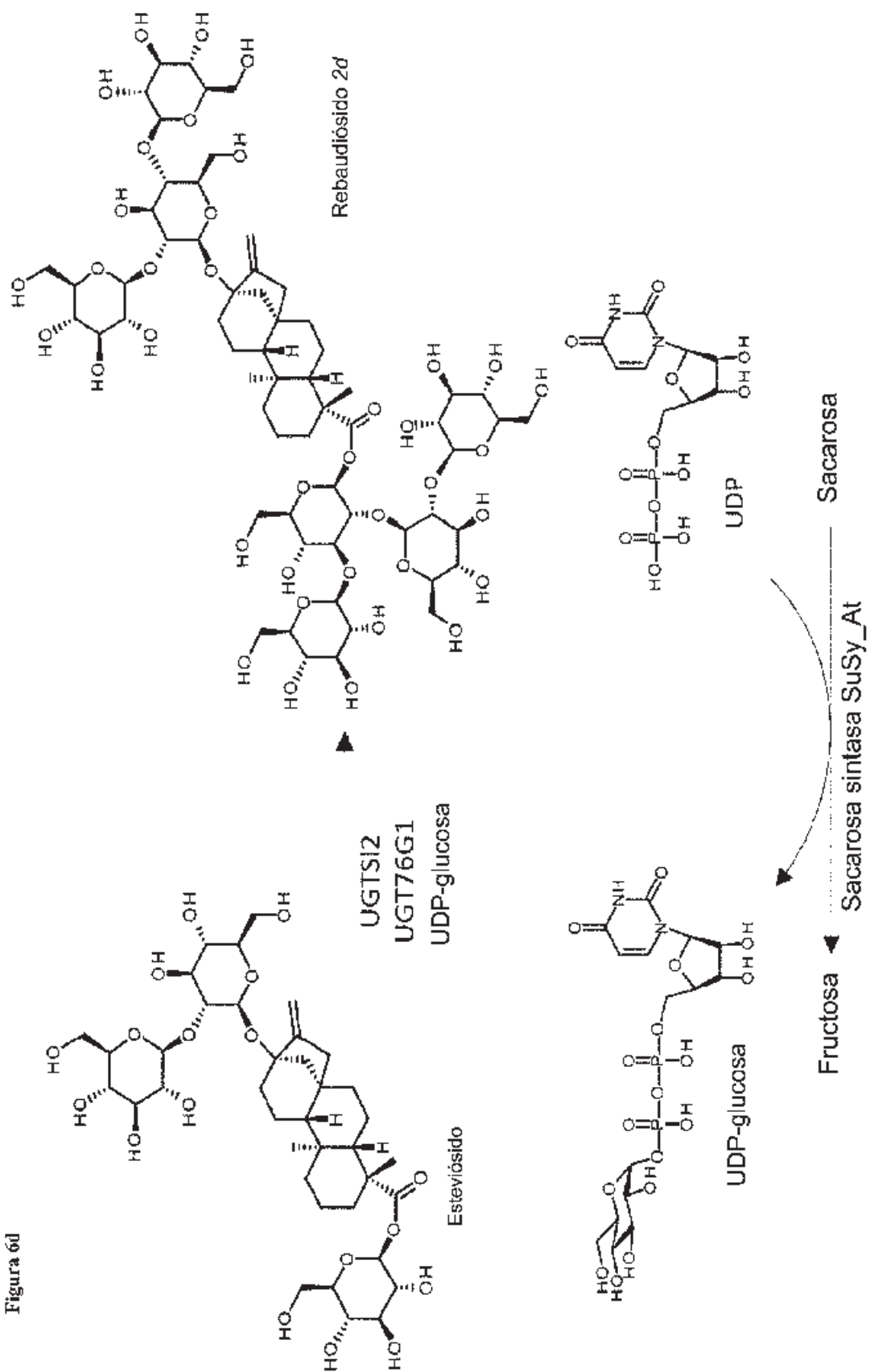


Figura 6f

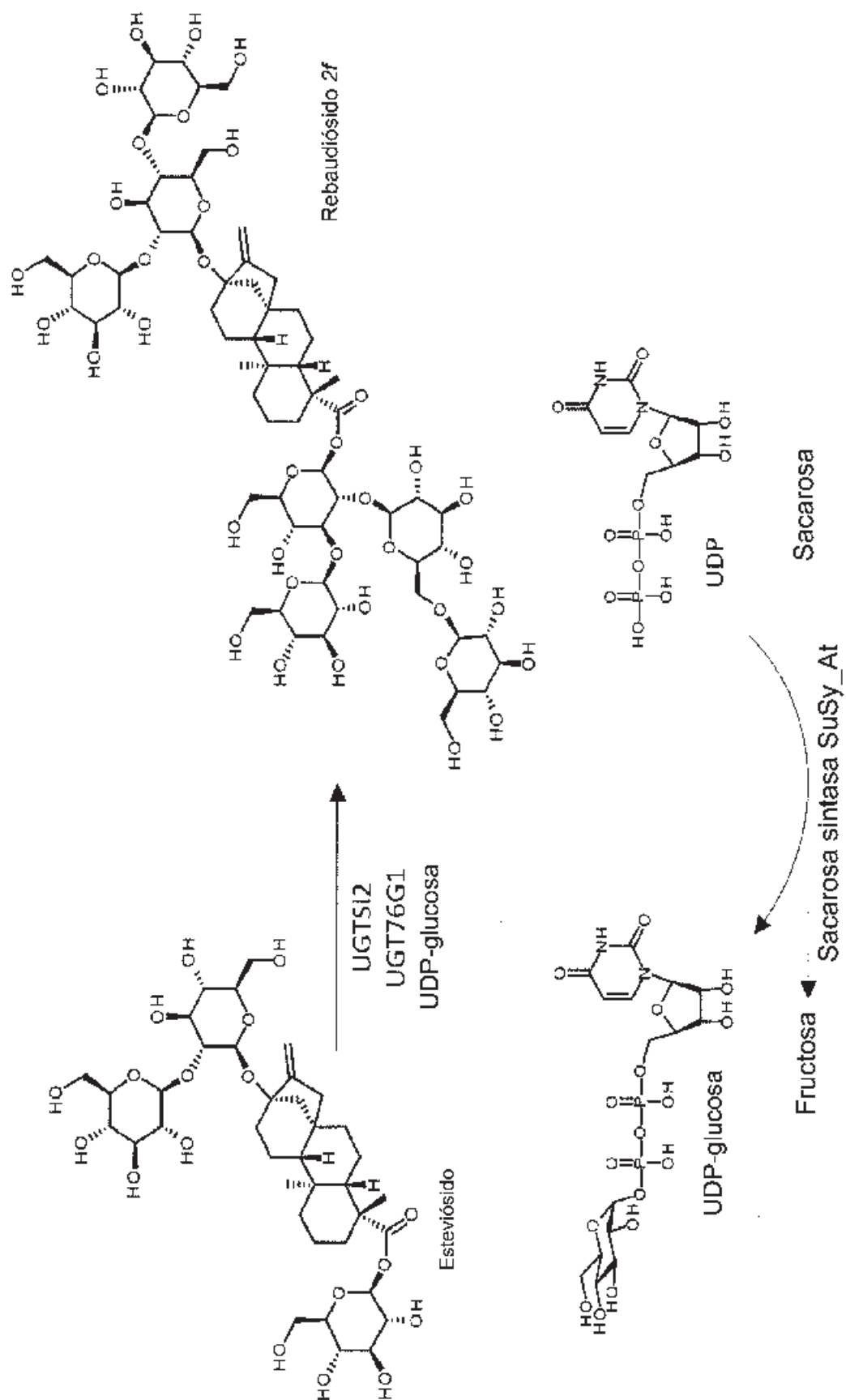


Figura 6g

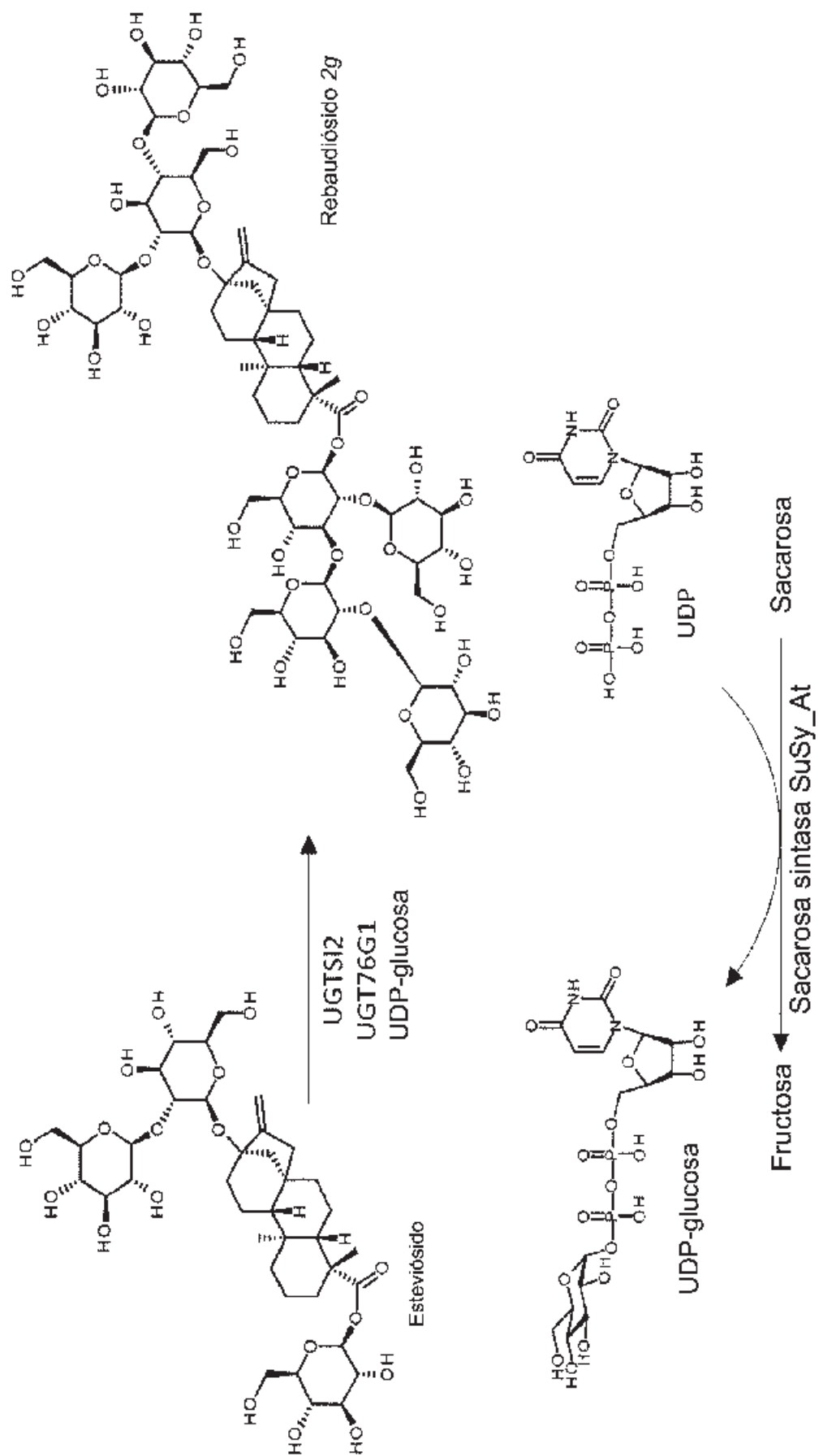


Figura 6h

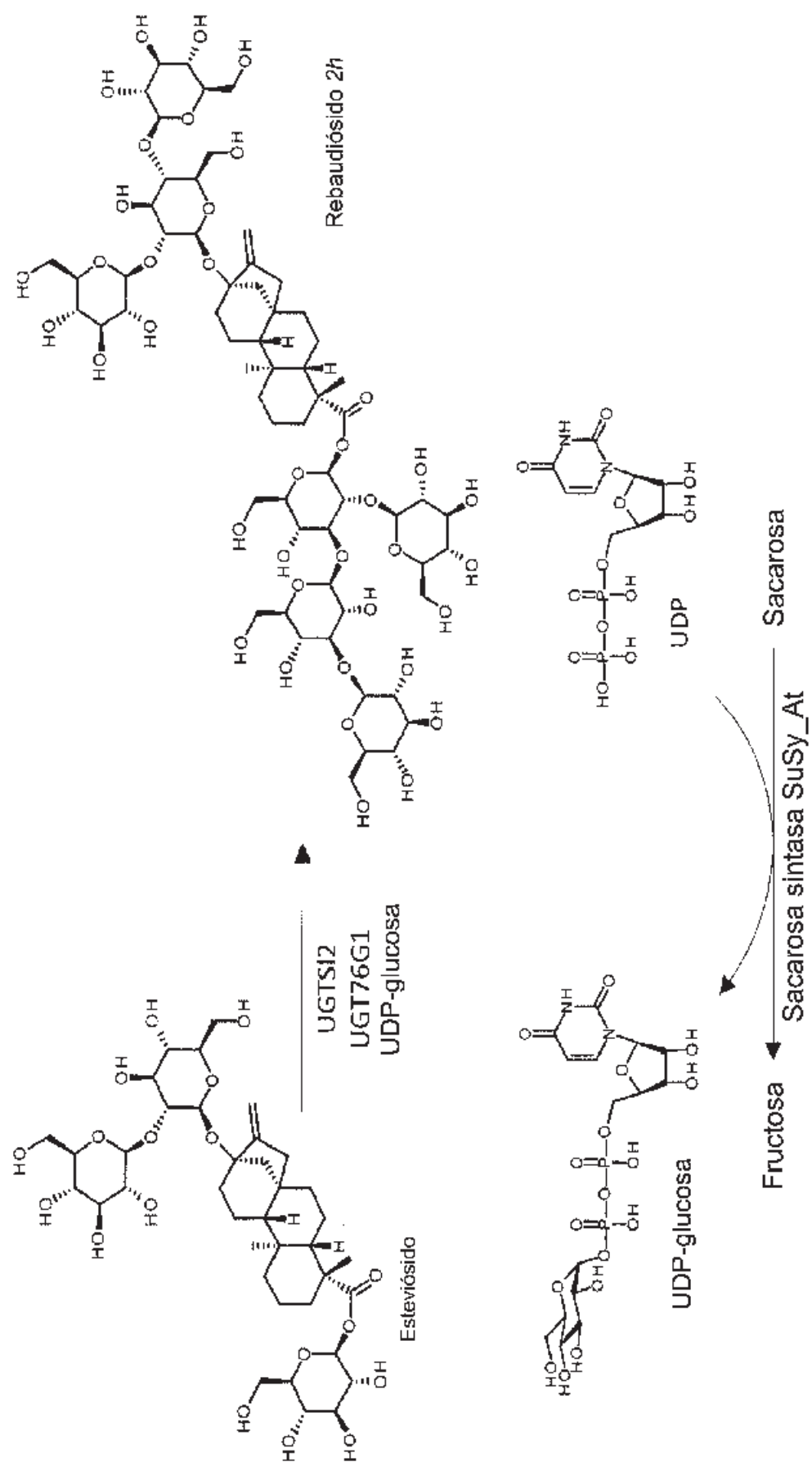


Figura 6i

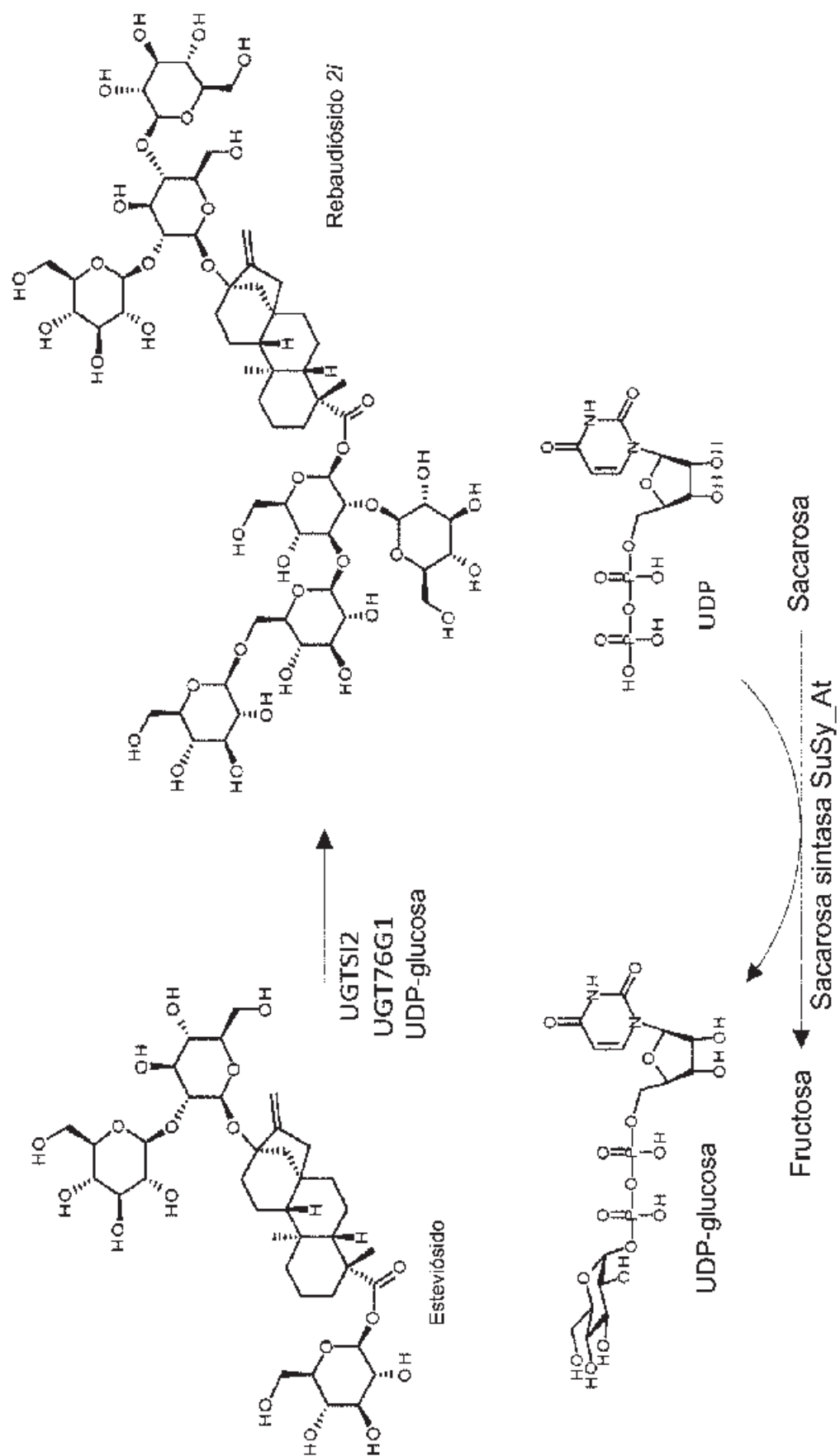


Figura 6j

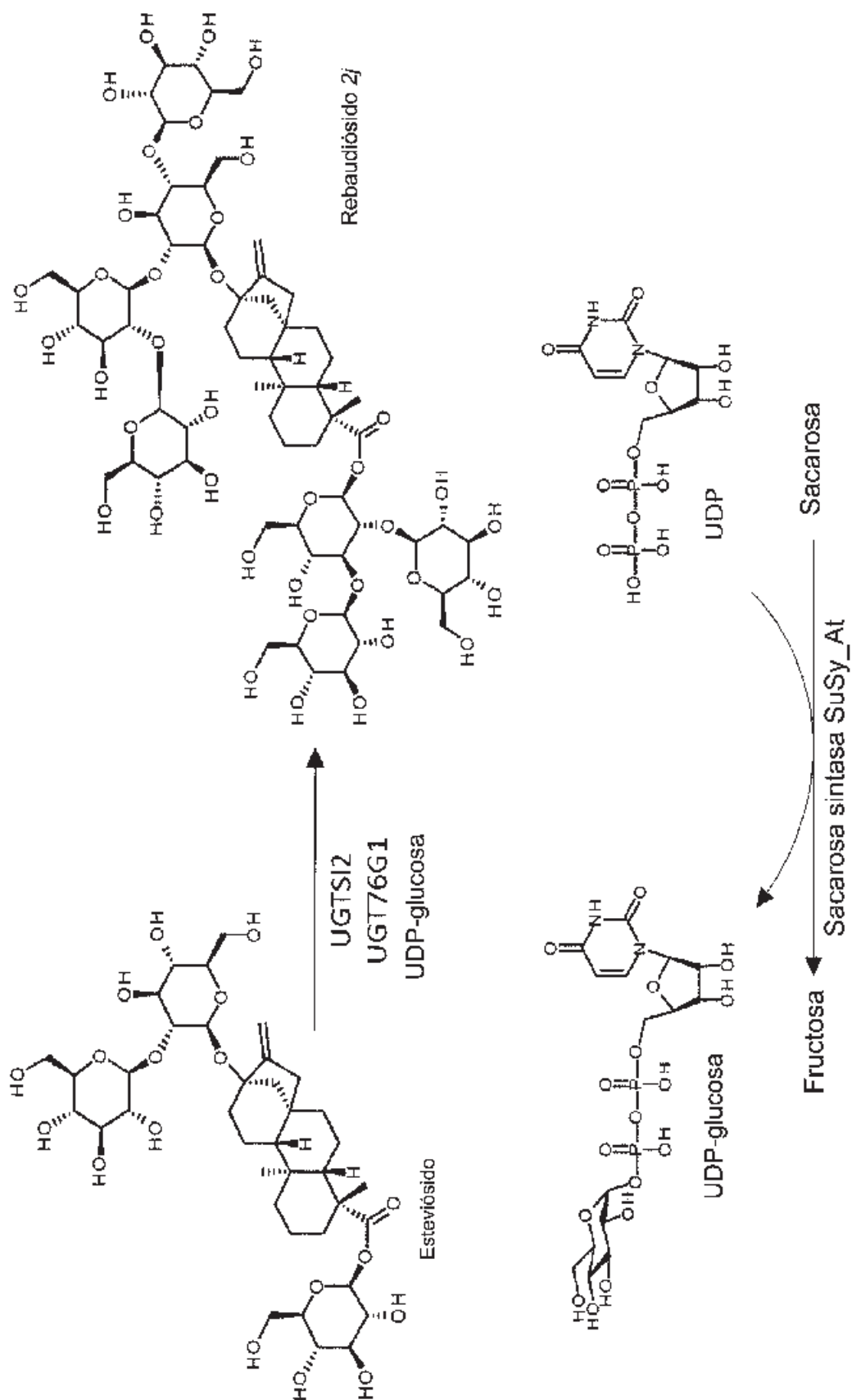
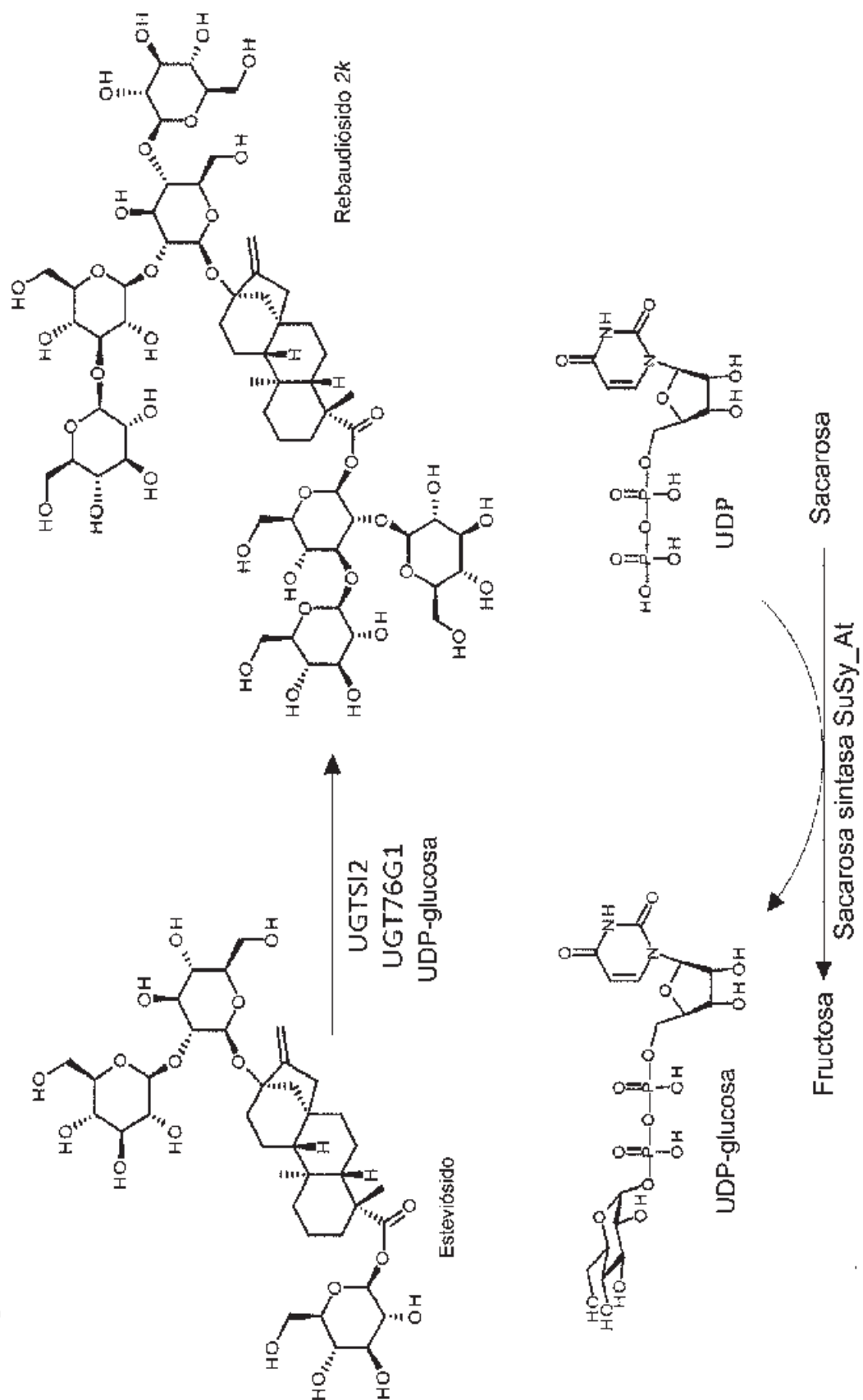


Figura 6k



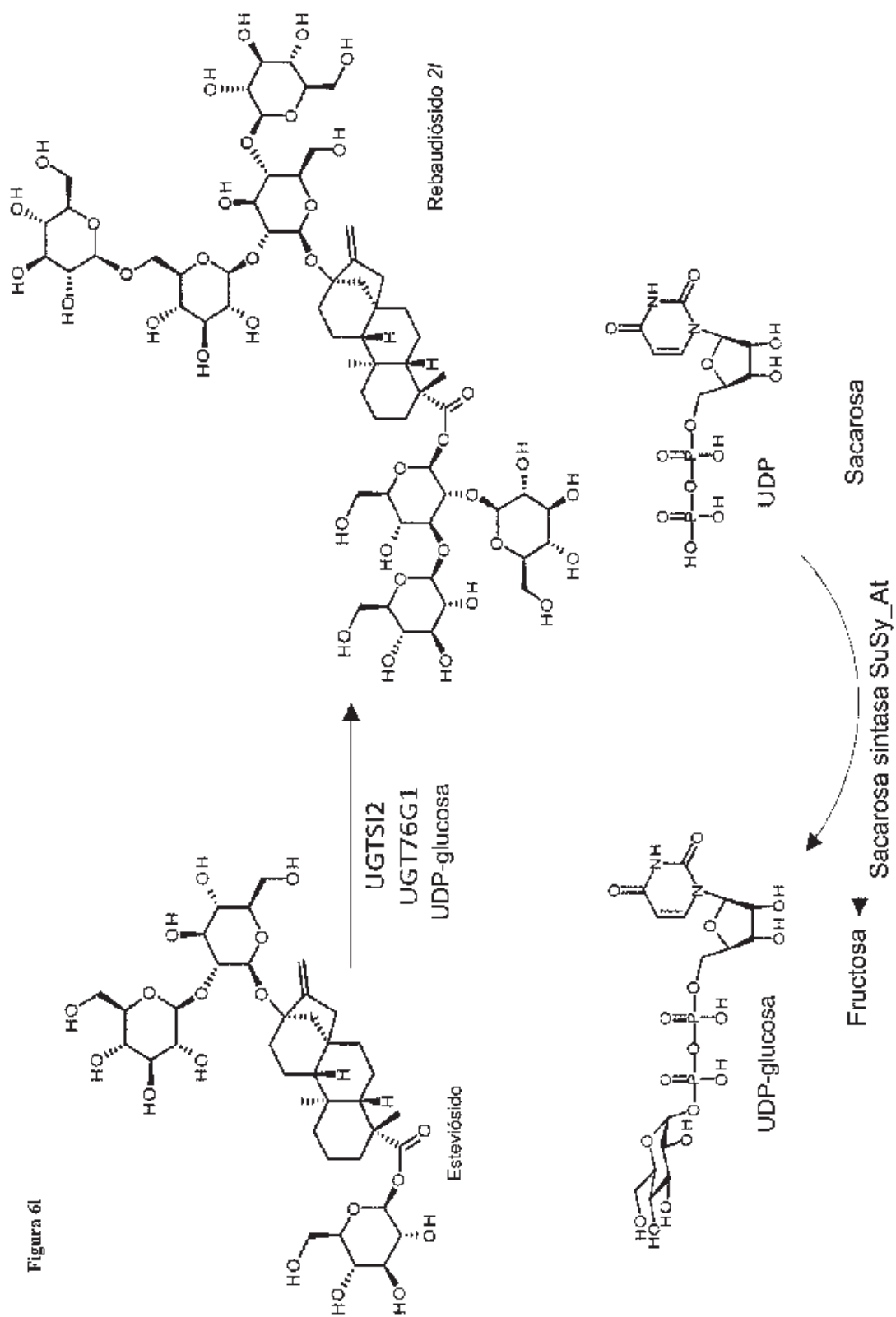


Figura 6m

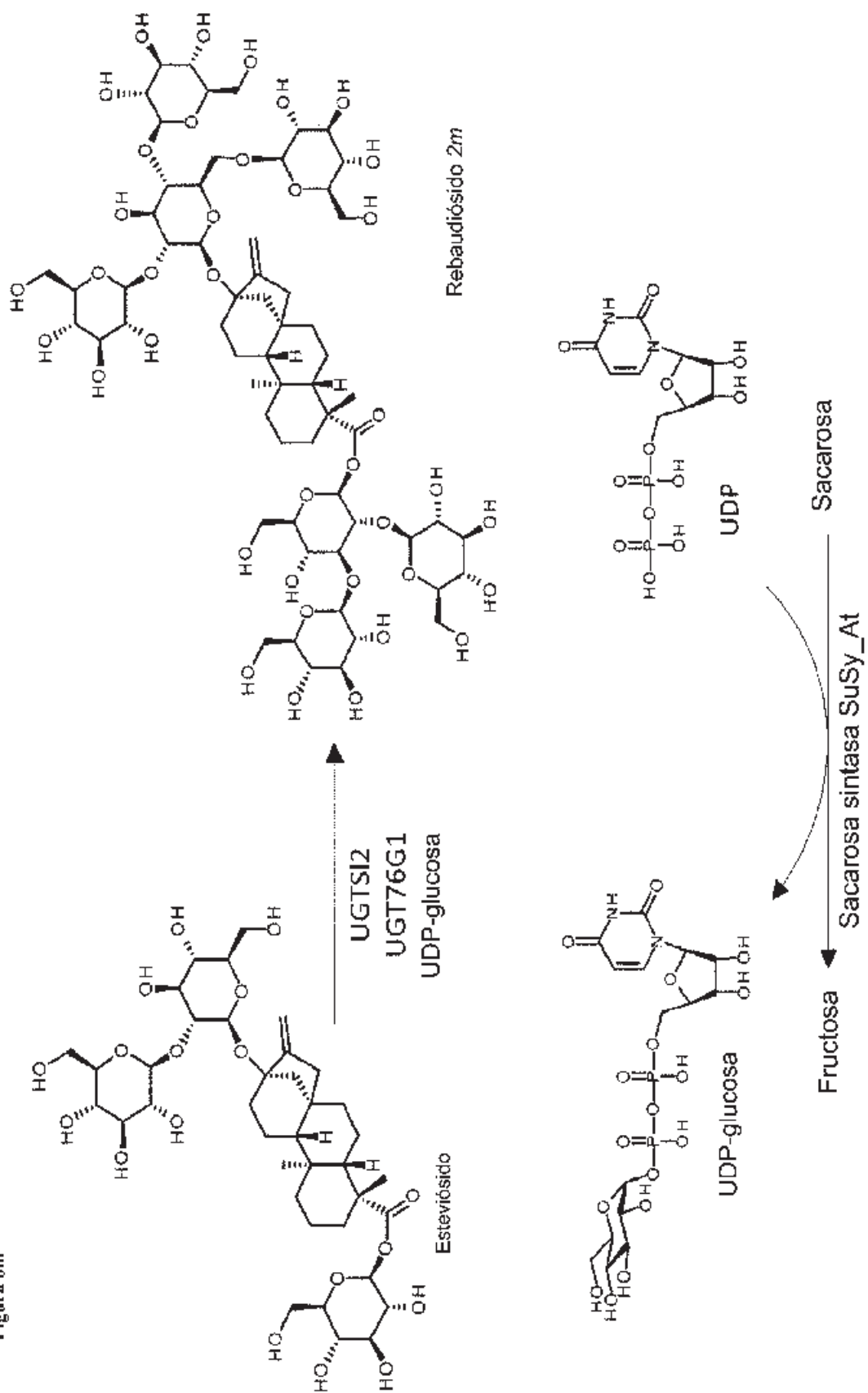


Figura 6u

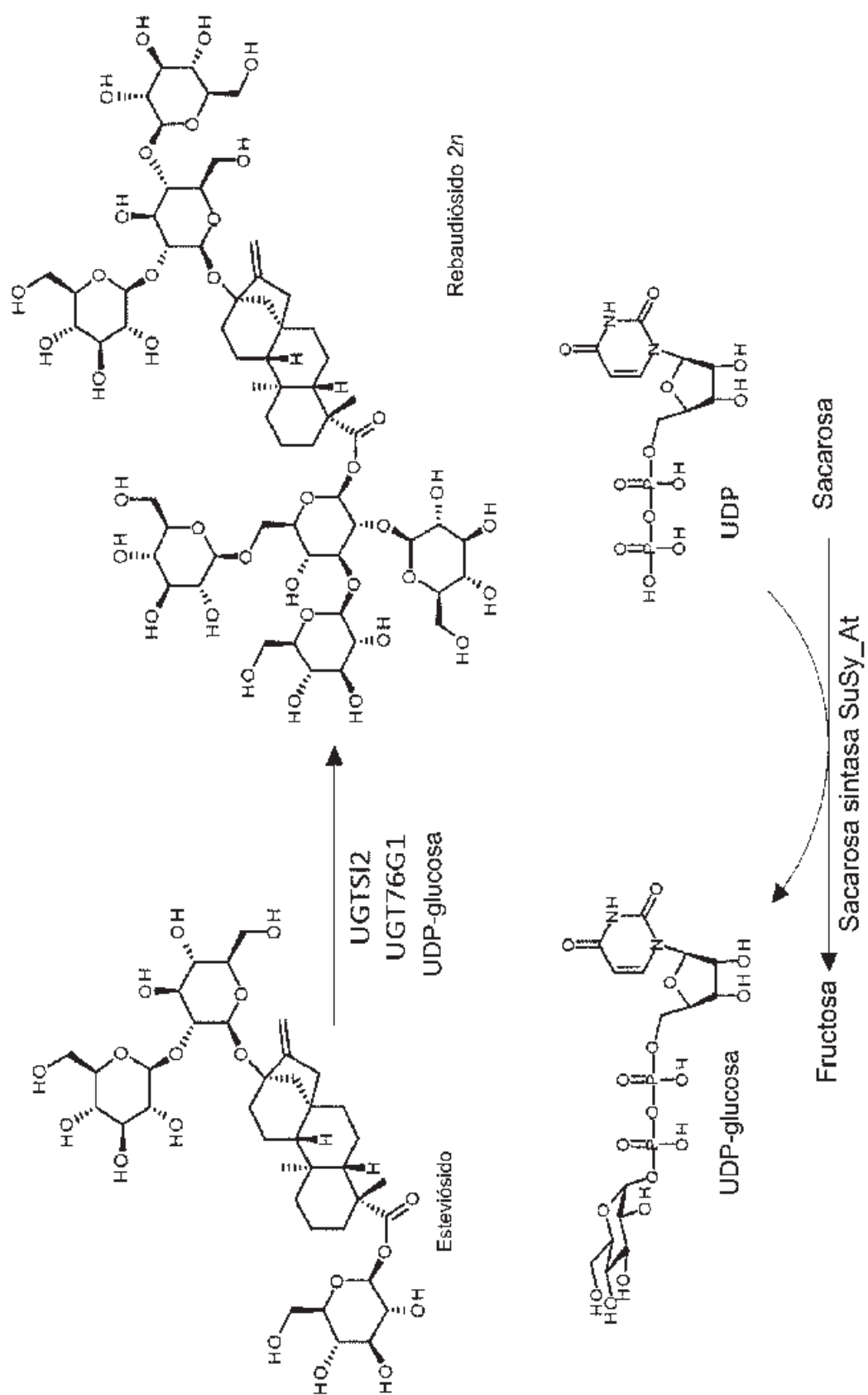
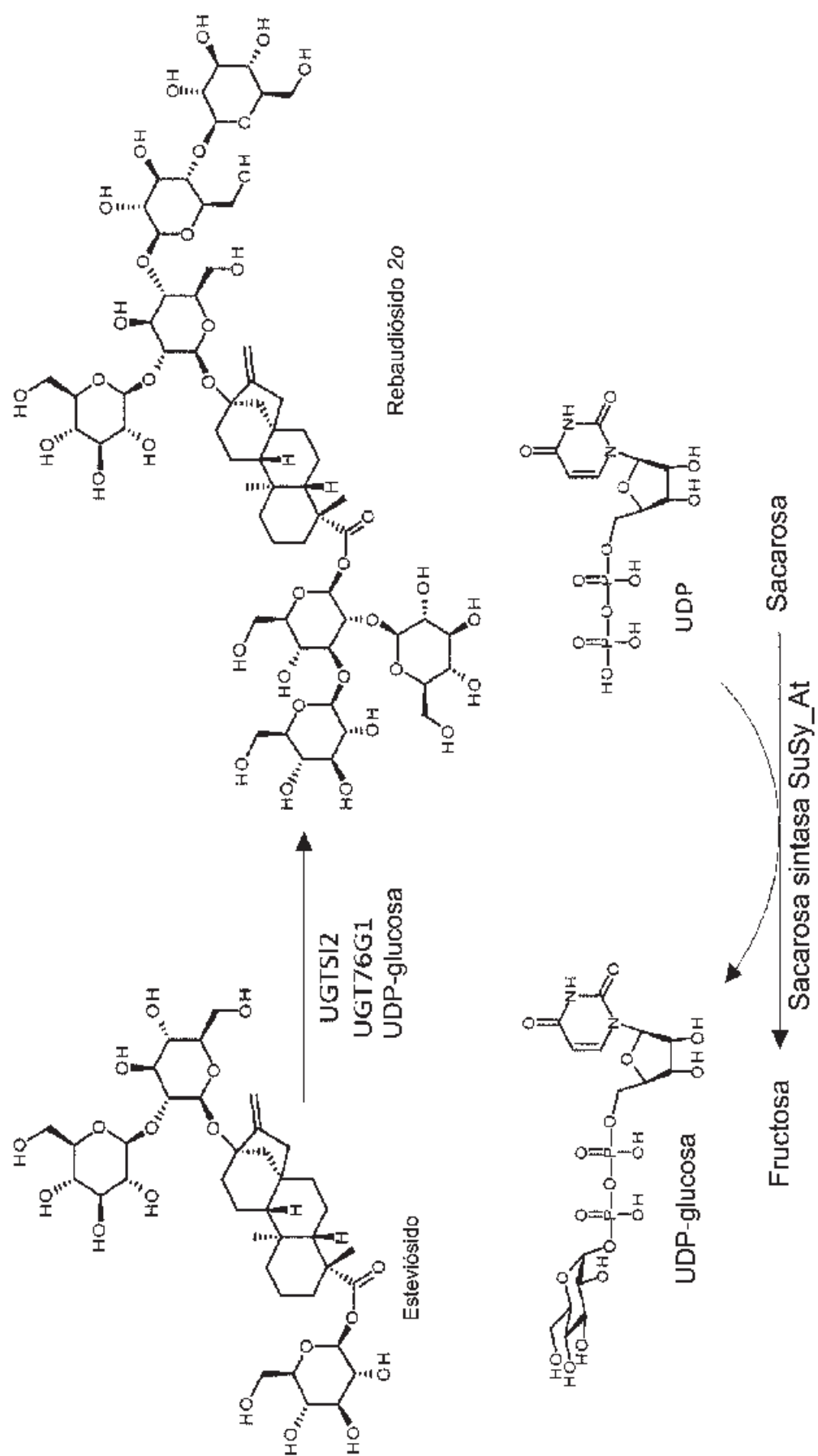


Figura 60



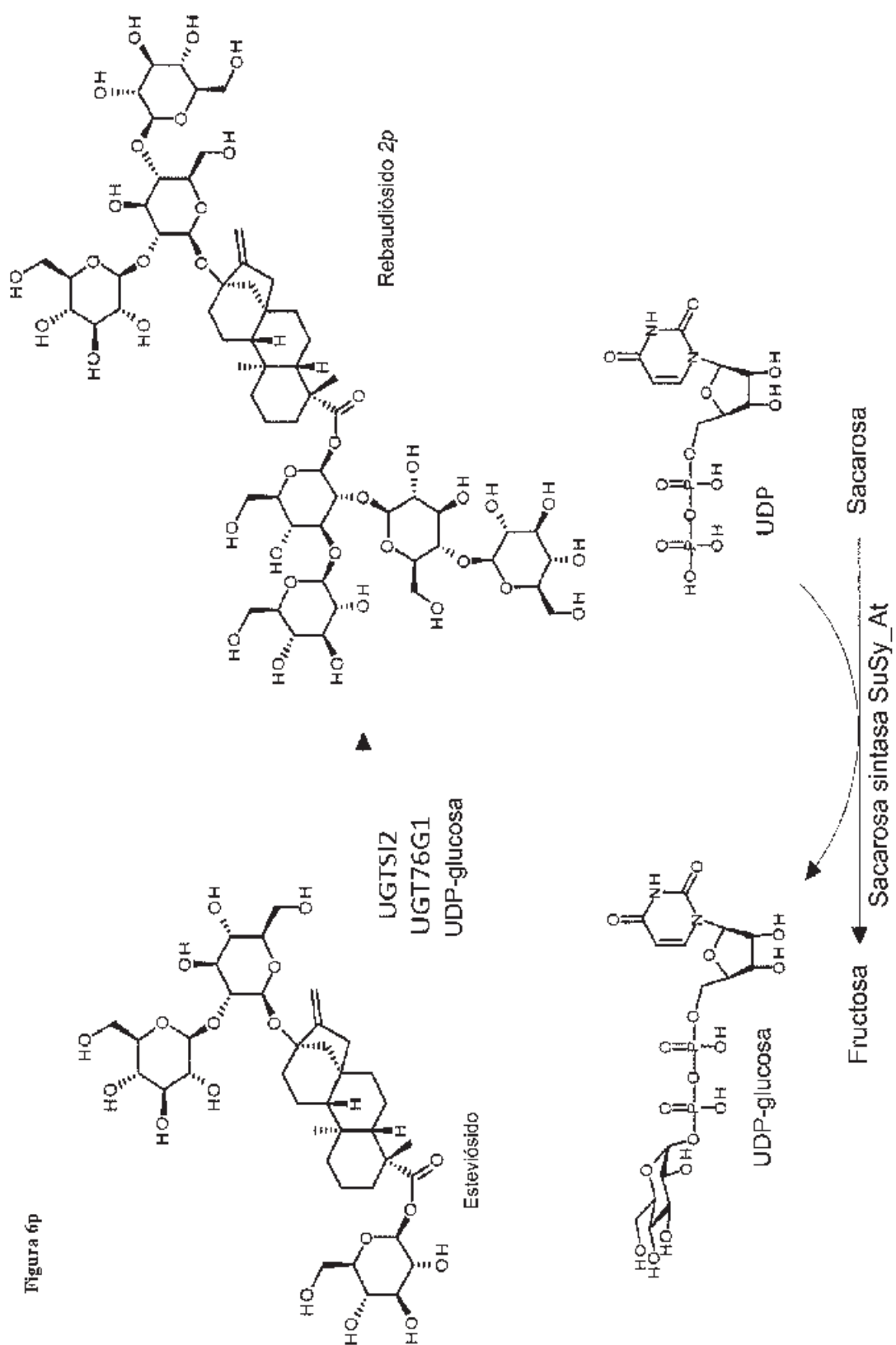


Figura 6q

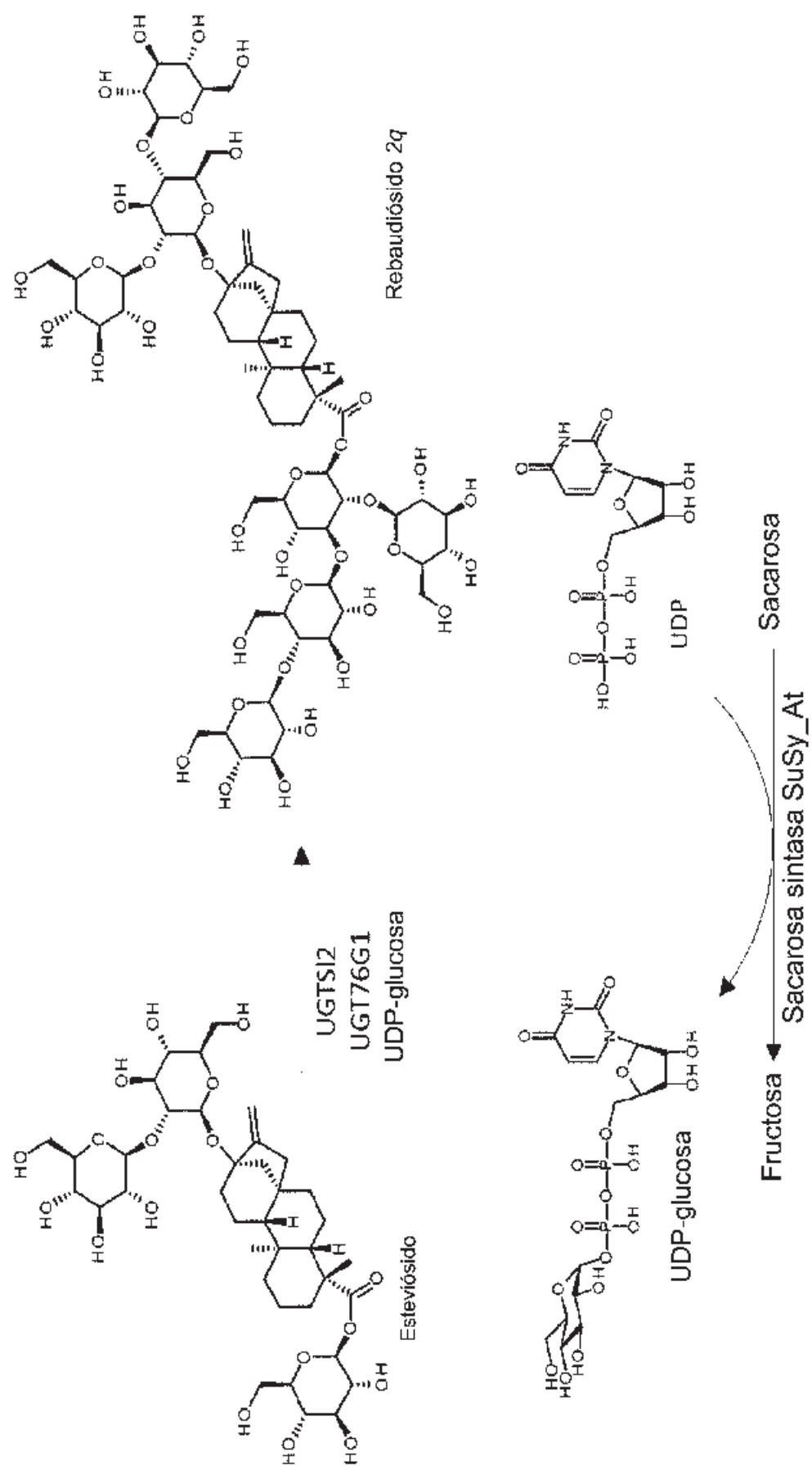
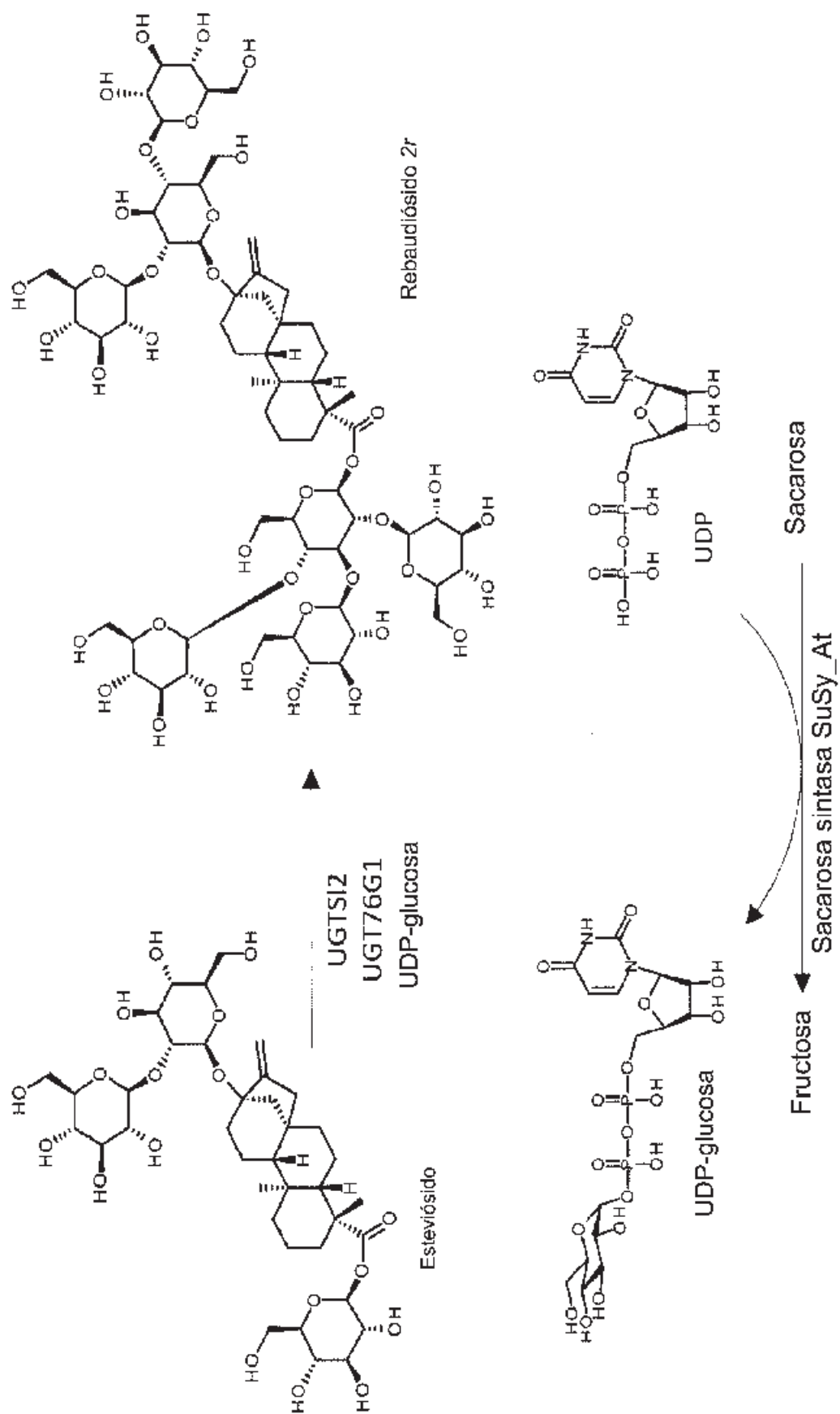
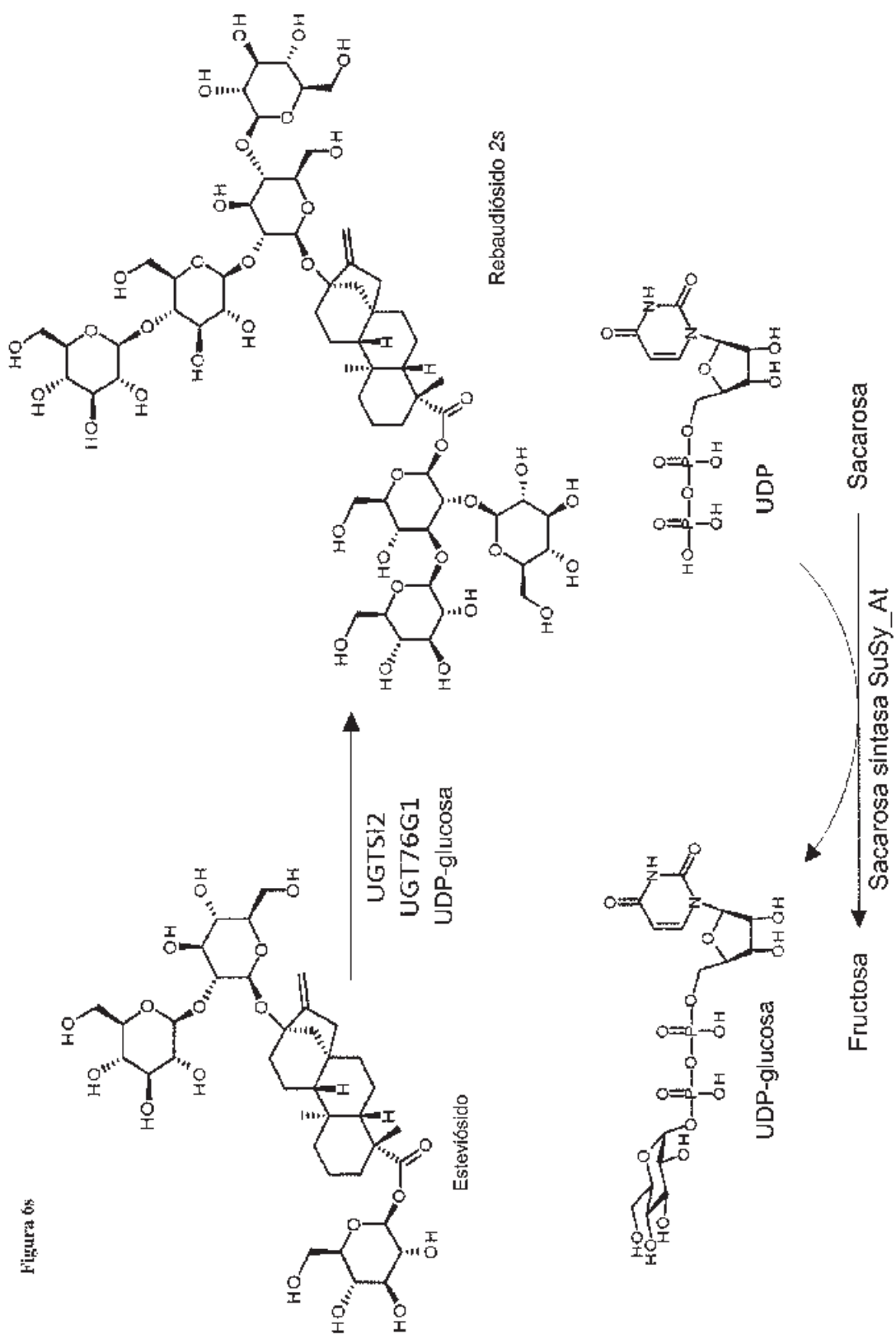


Figura 6r





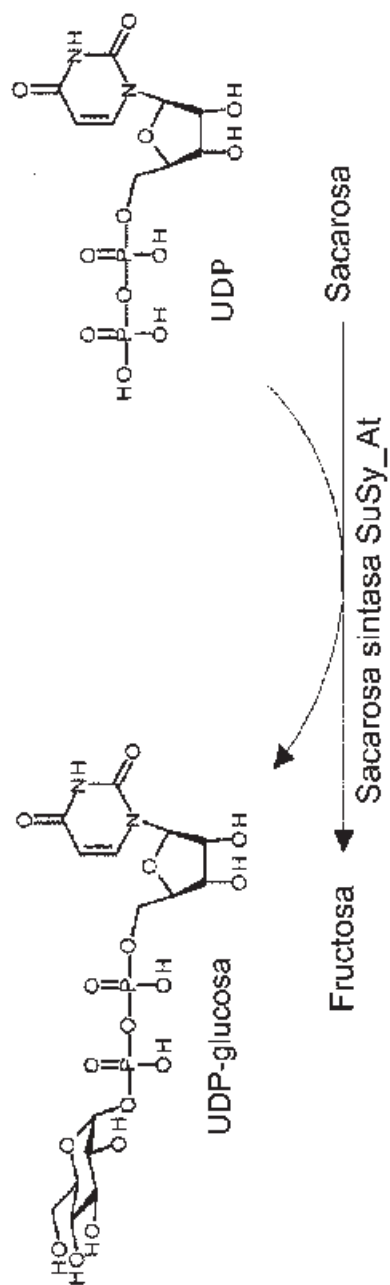
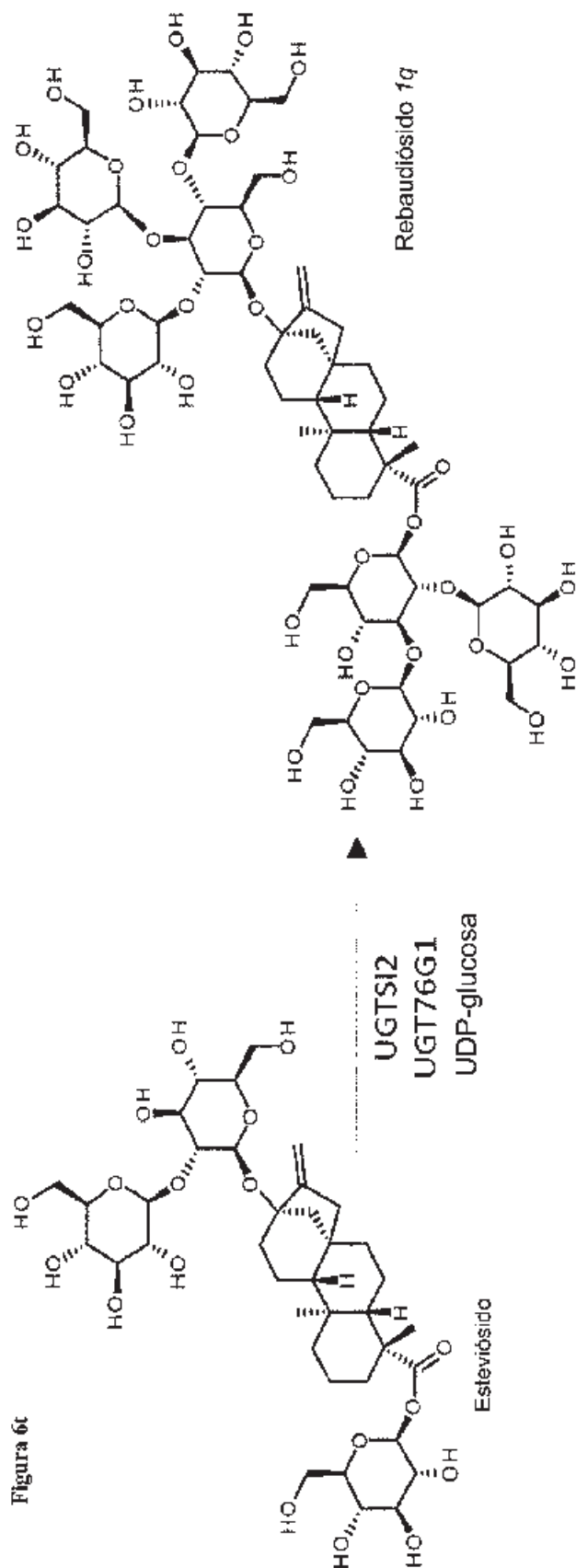


Figura 7a

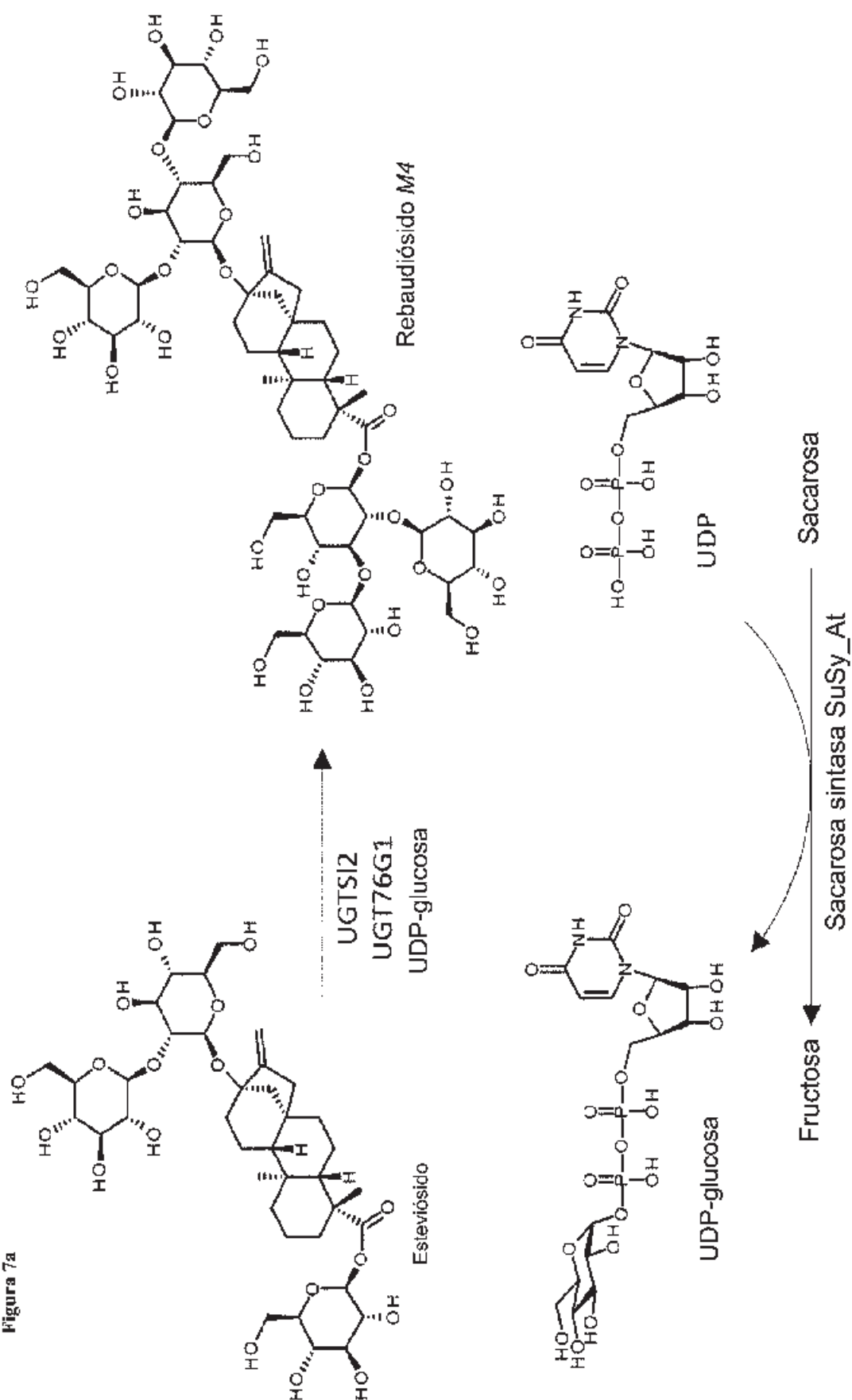


Figura 7b

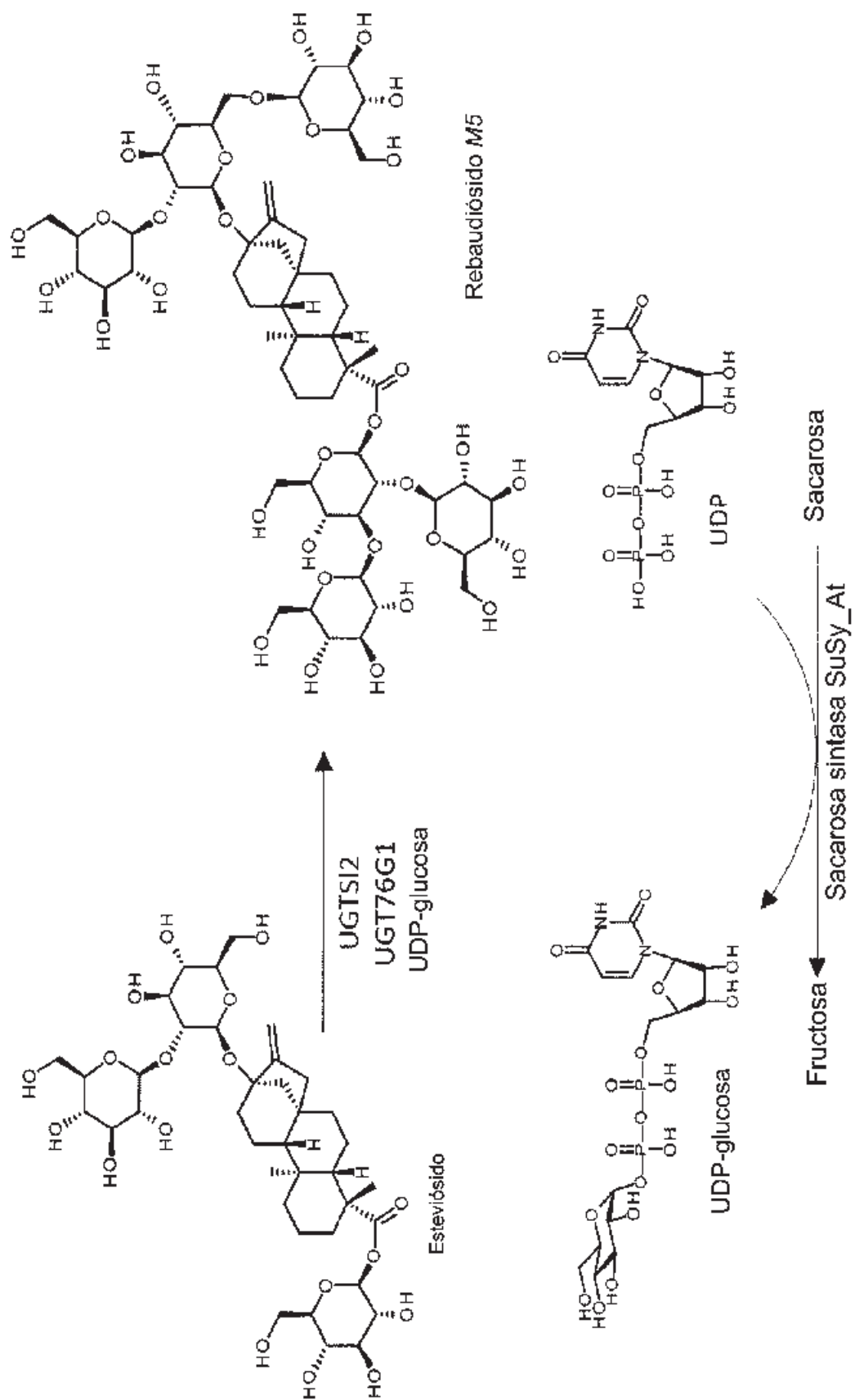


Figura 8a

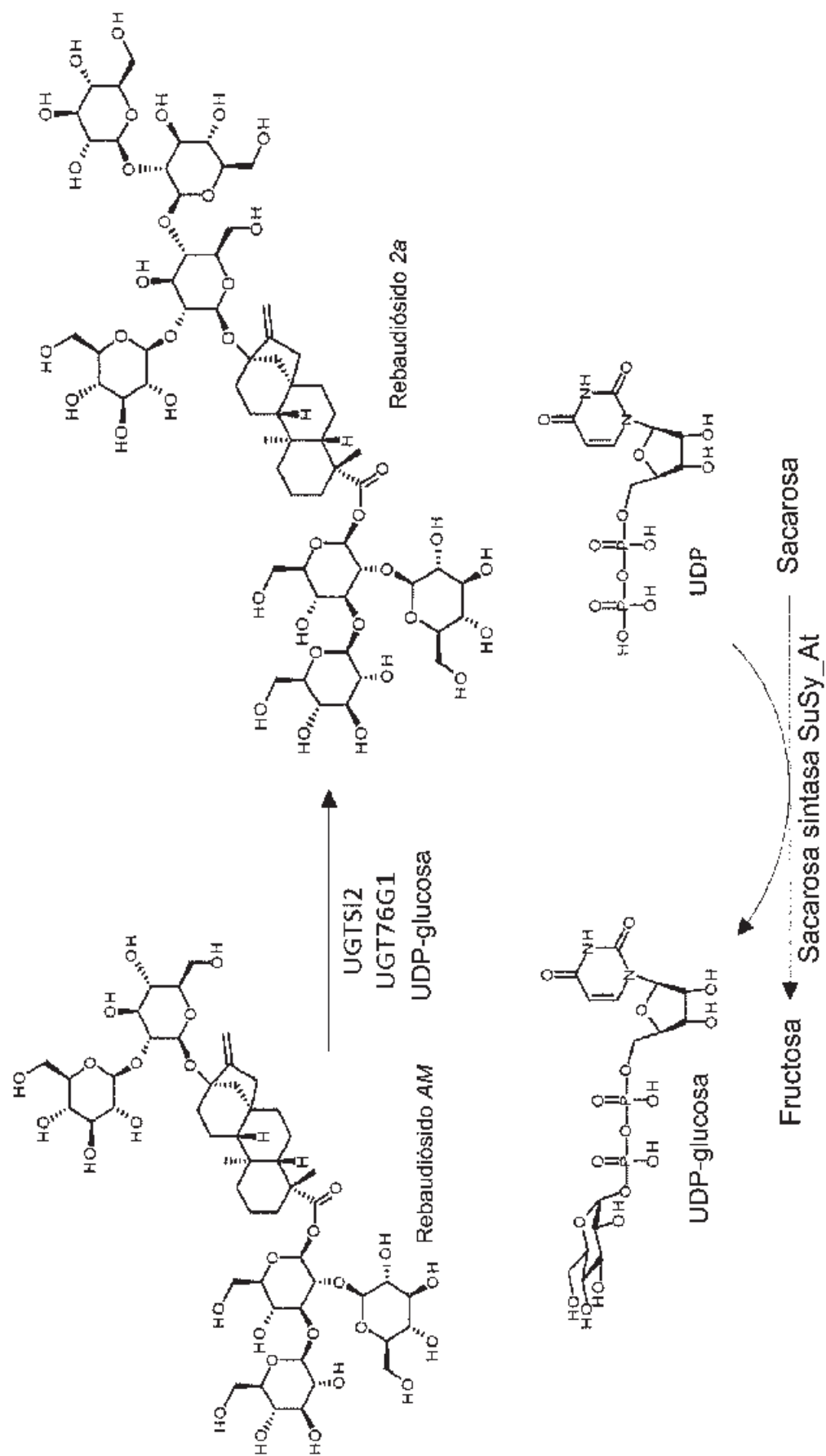


Figura 8b

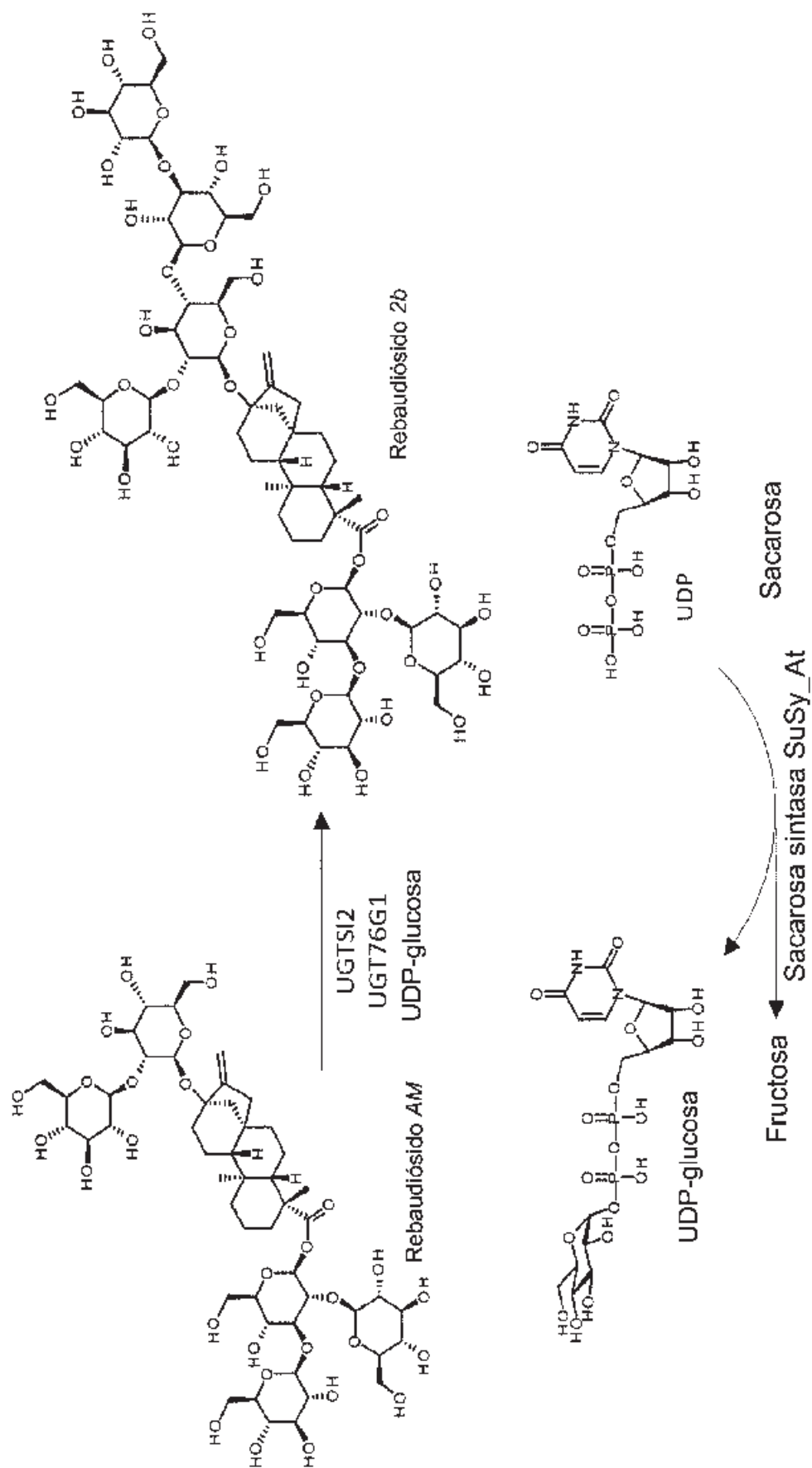


Figura 8c

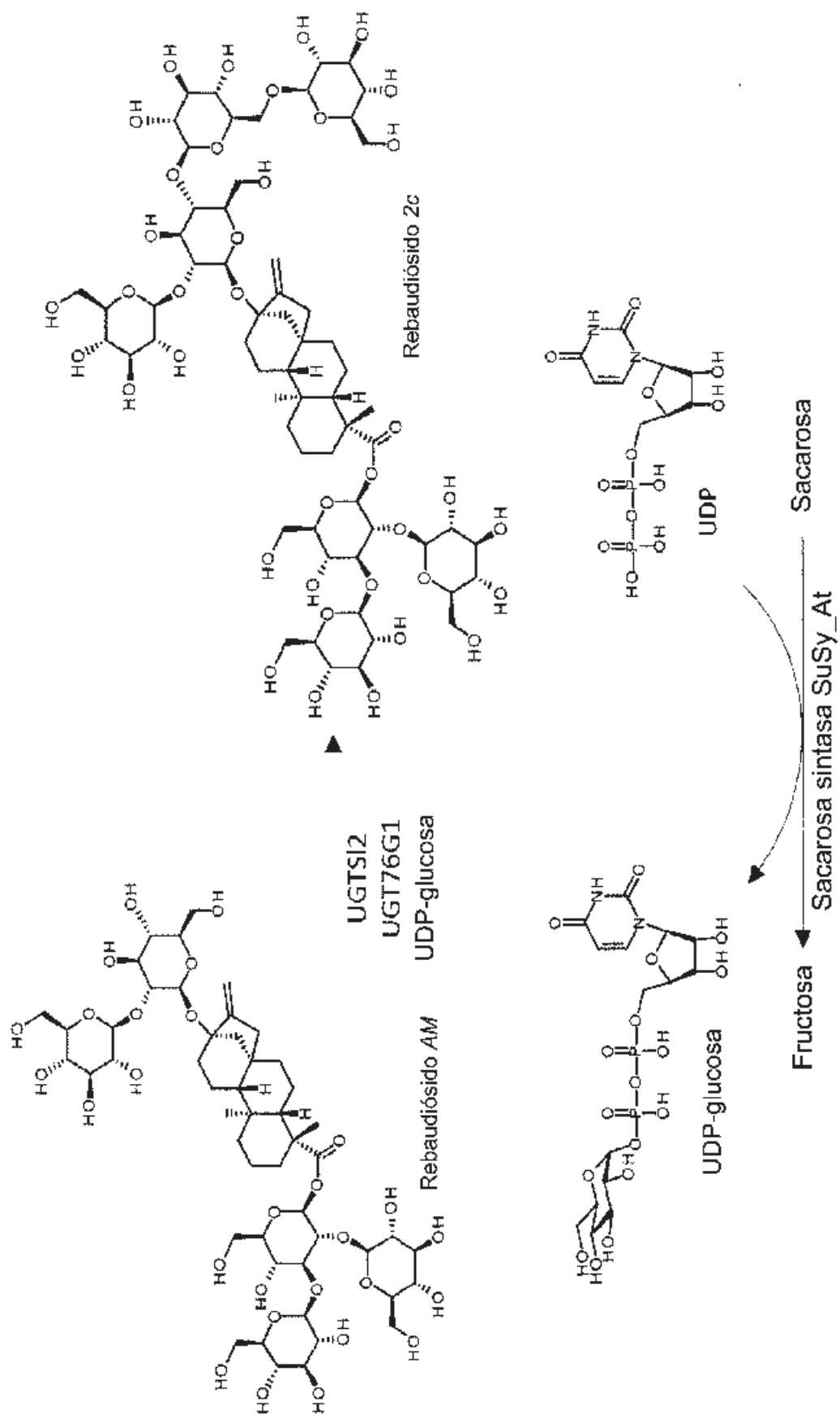


Figura 8d

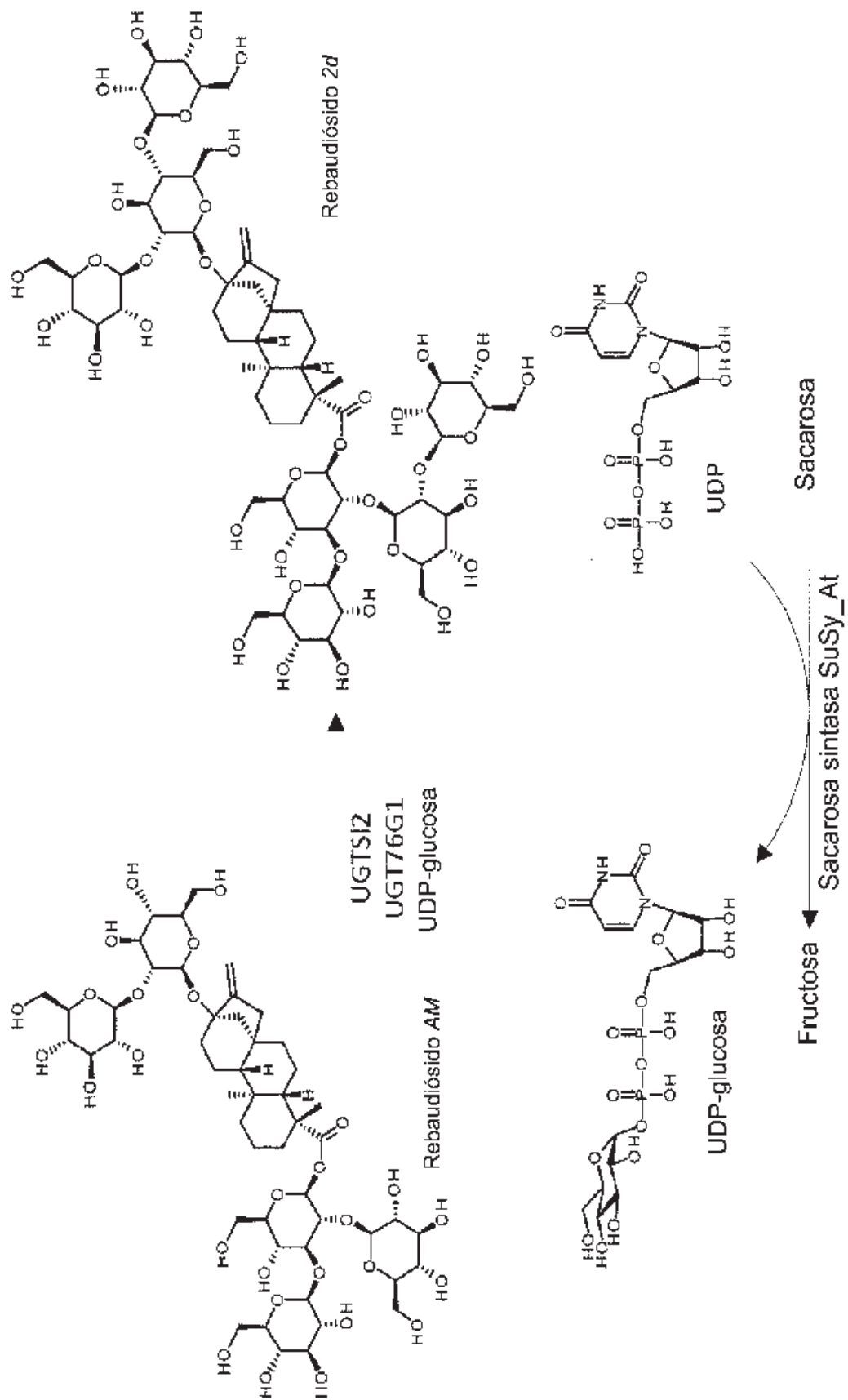


Figura 8c

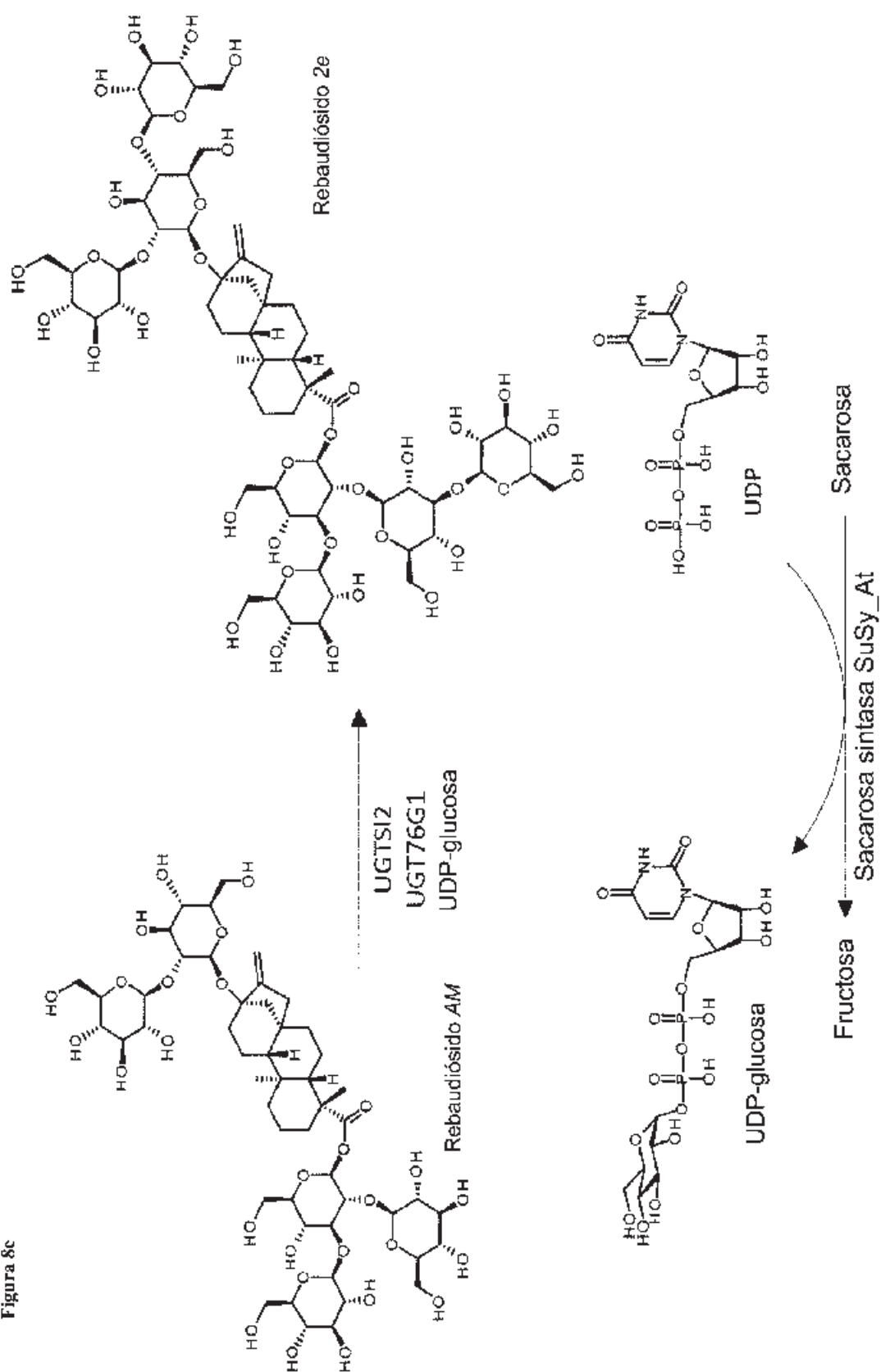


Figura 8f

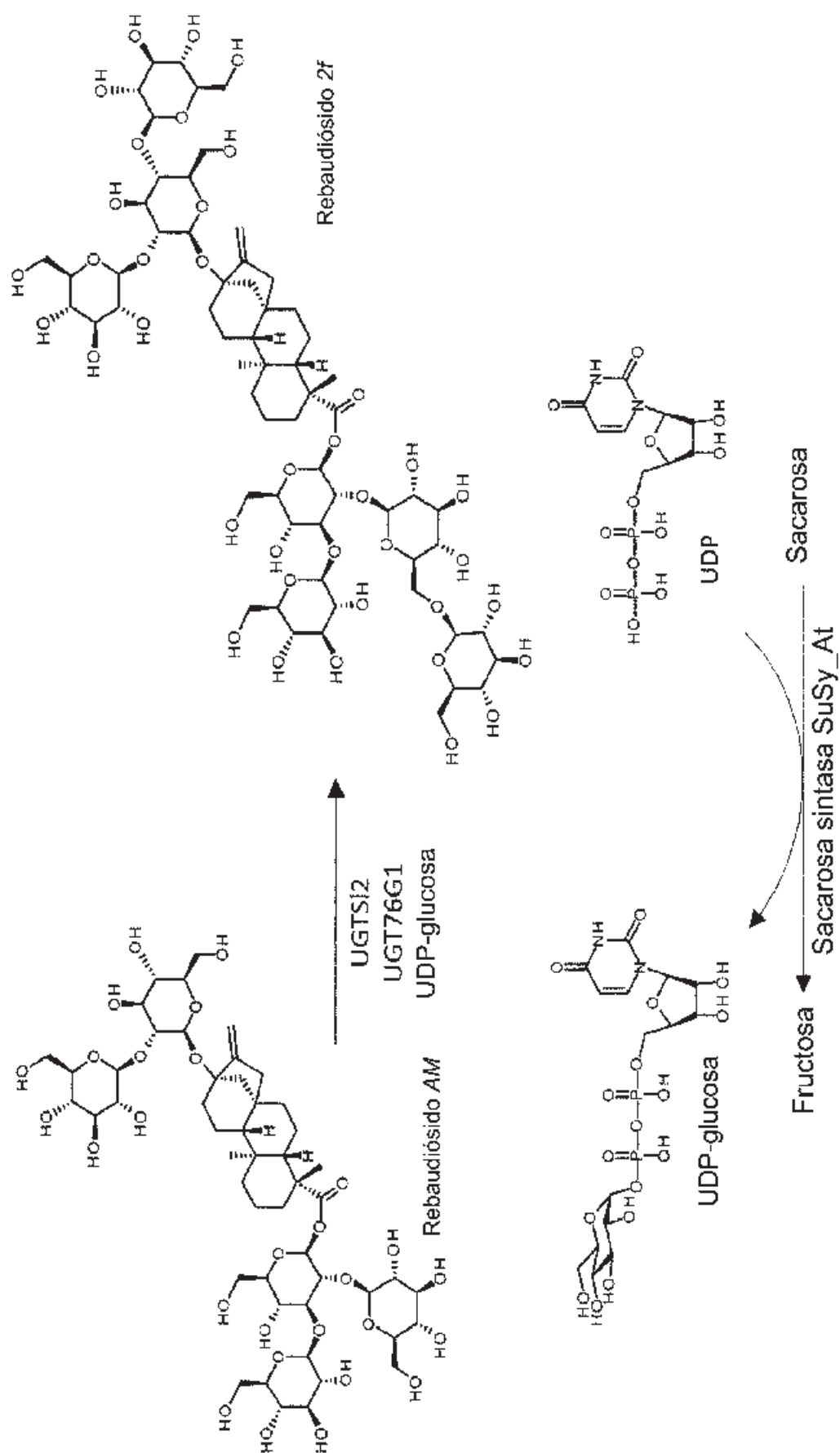


Figura 8g

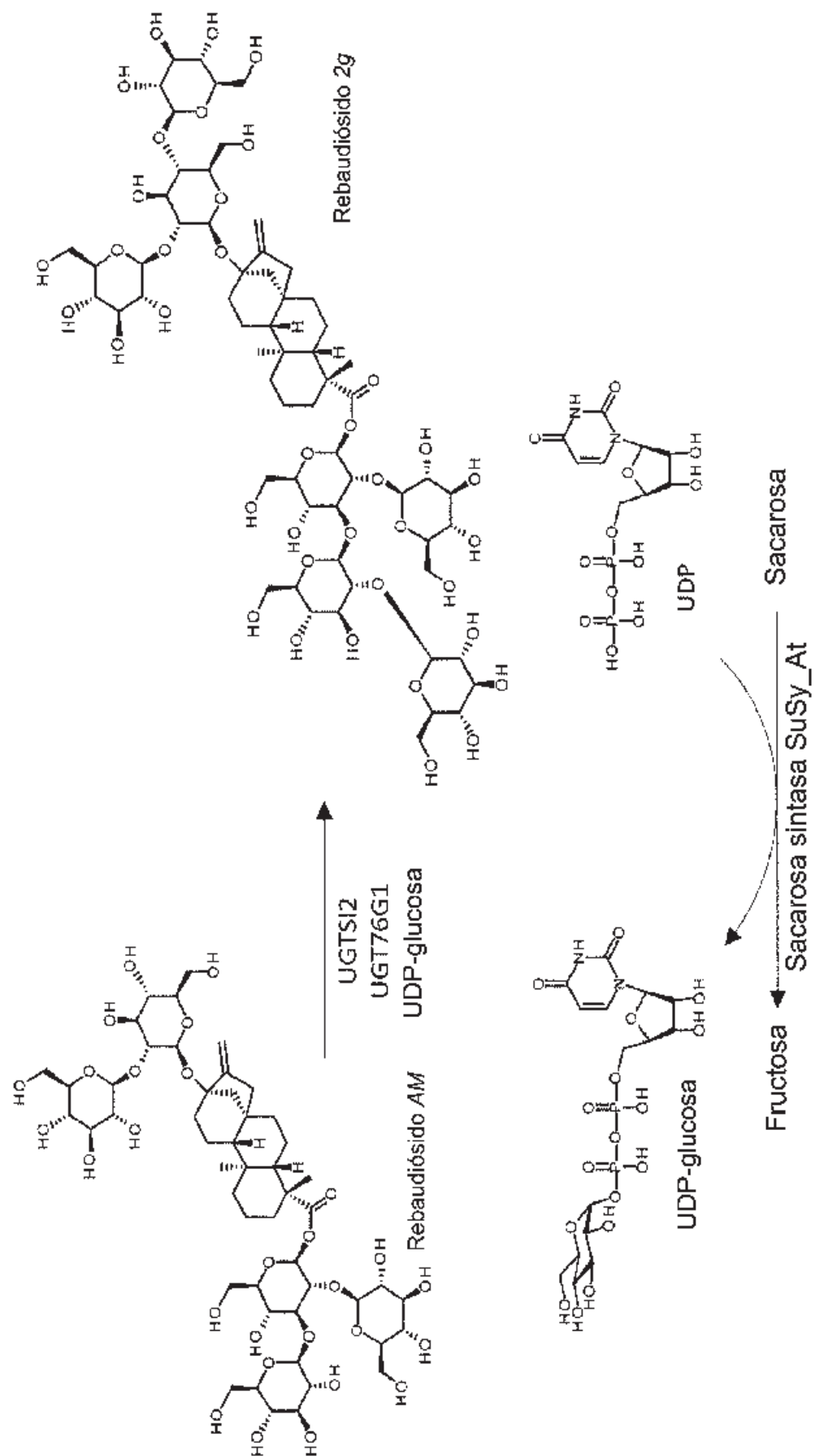


Figura 8h

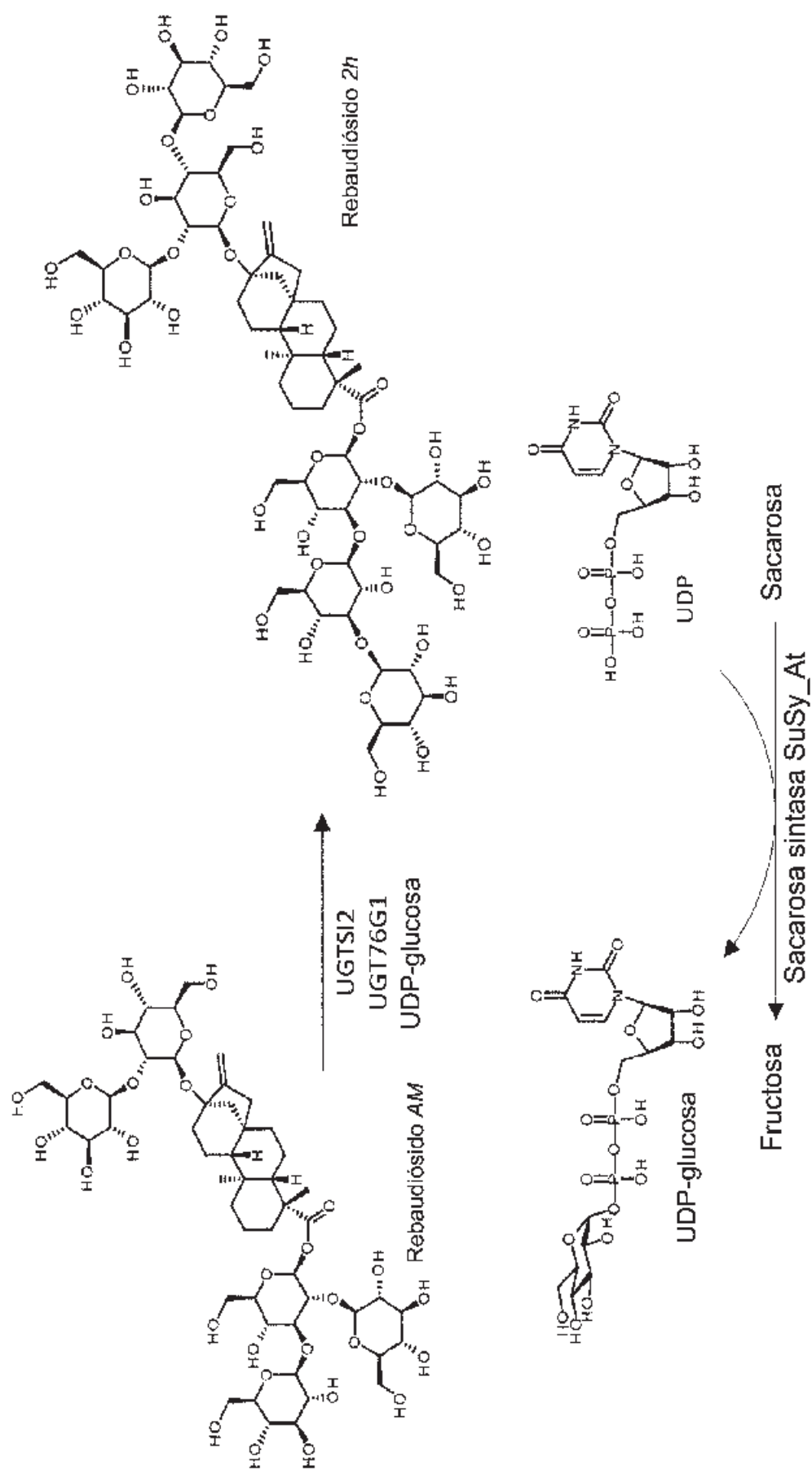


Figura 8i

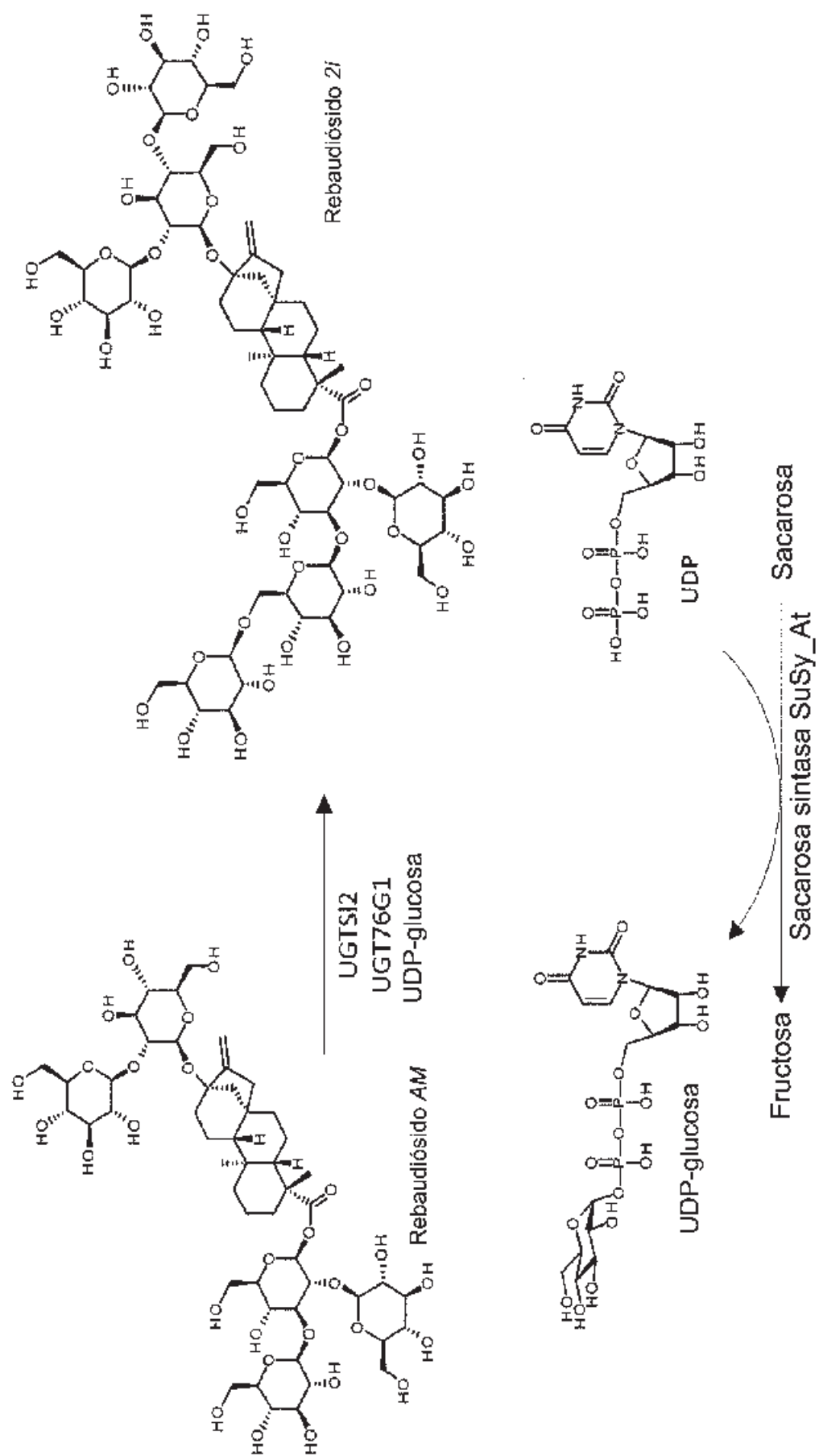


Figura 8j

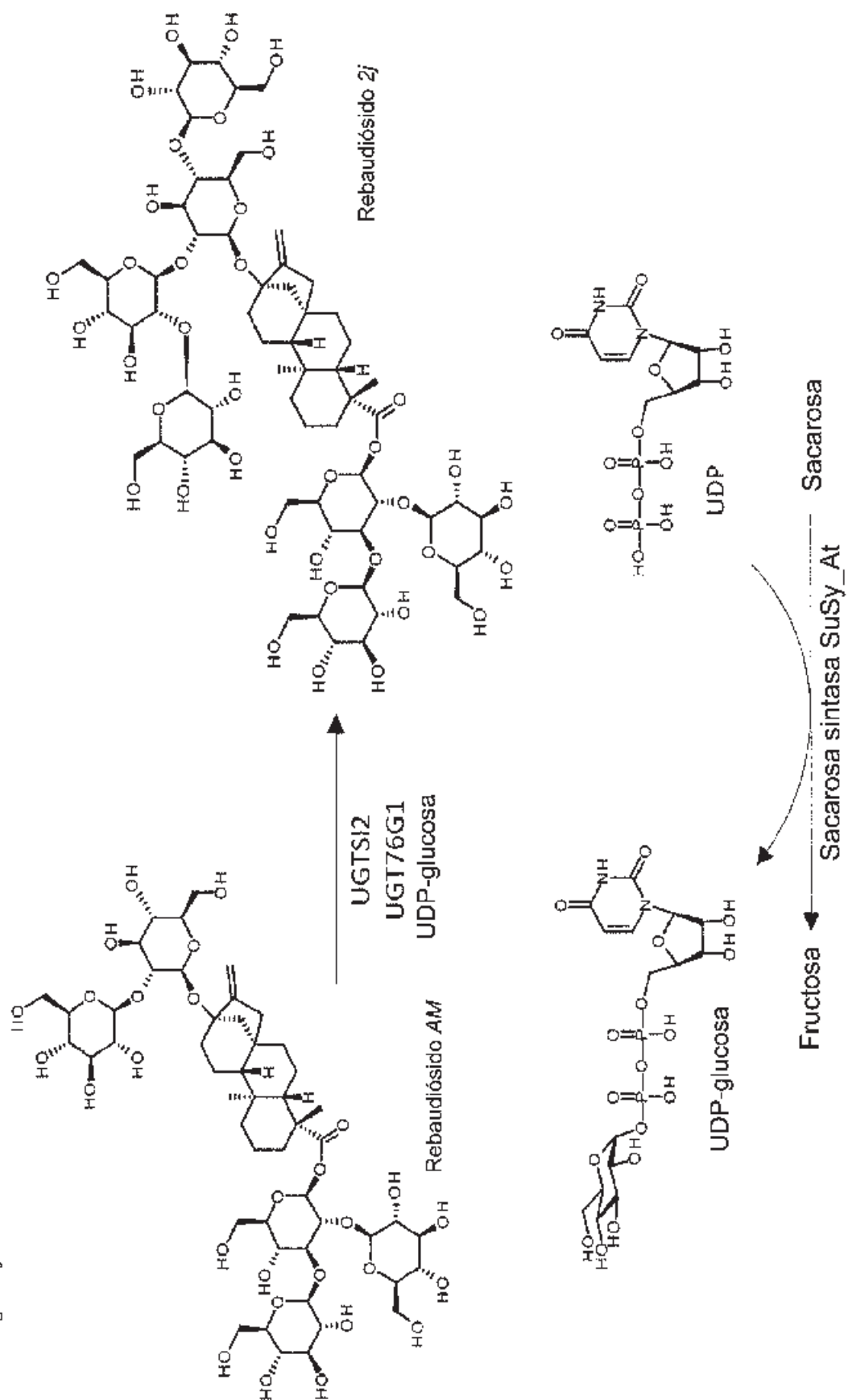
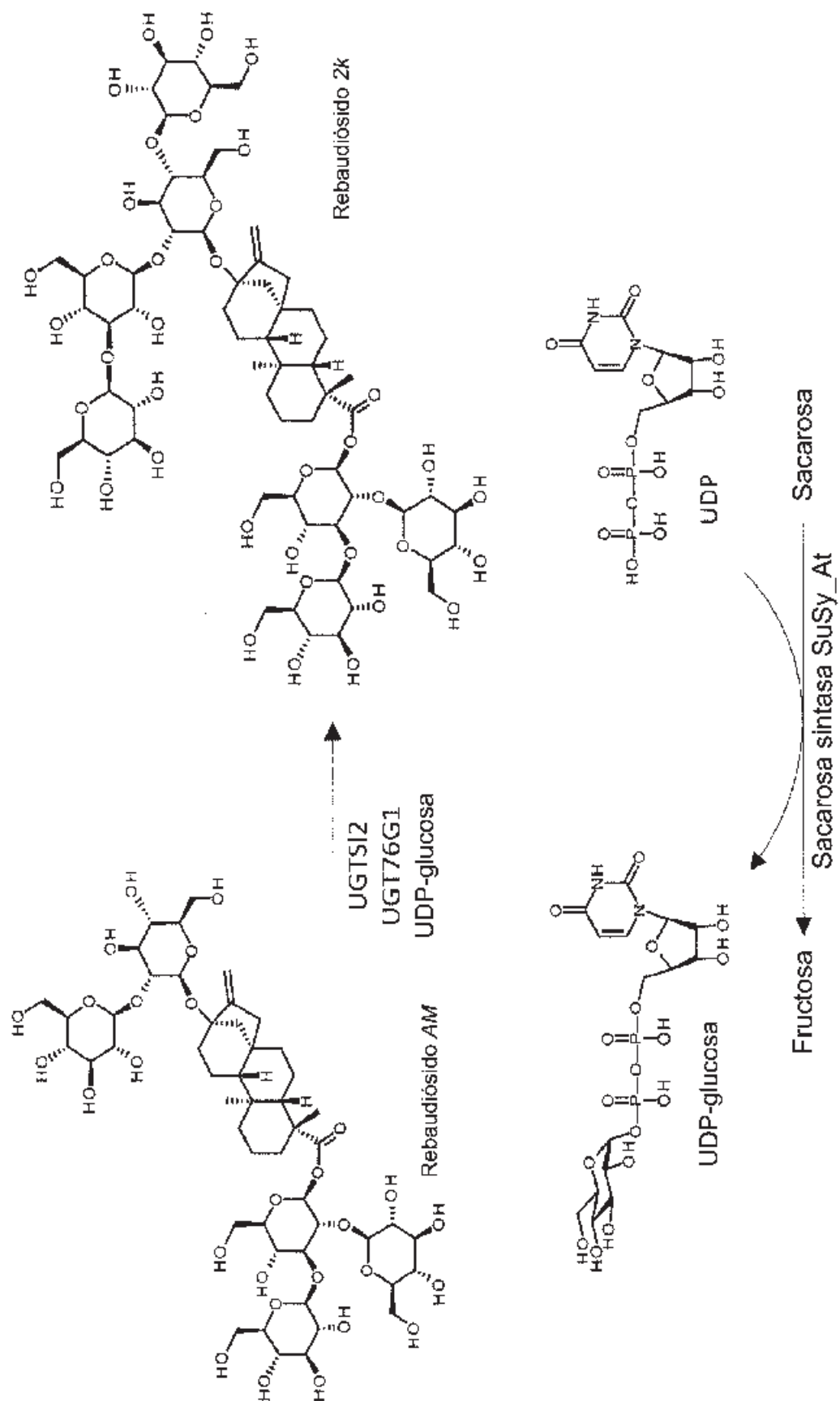


Figura 8k



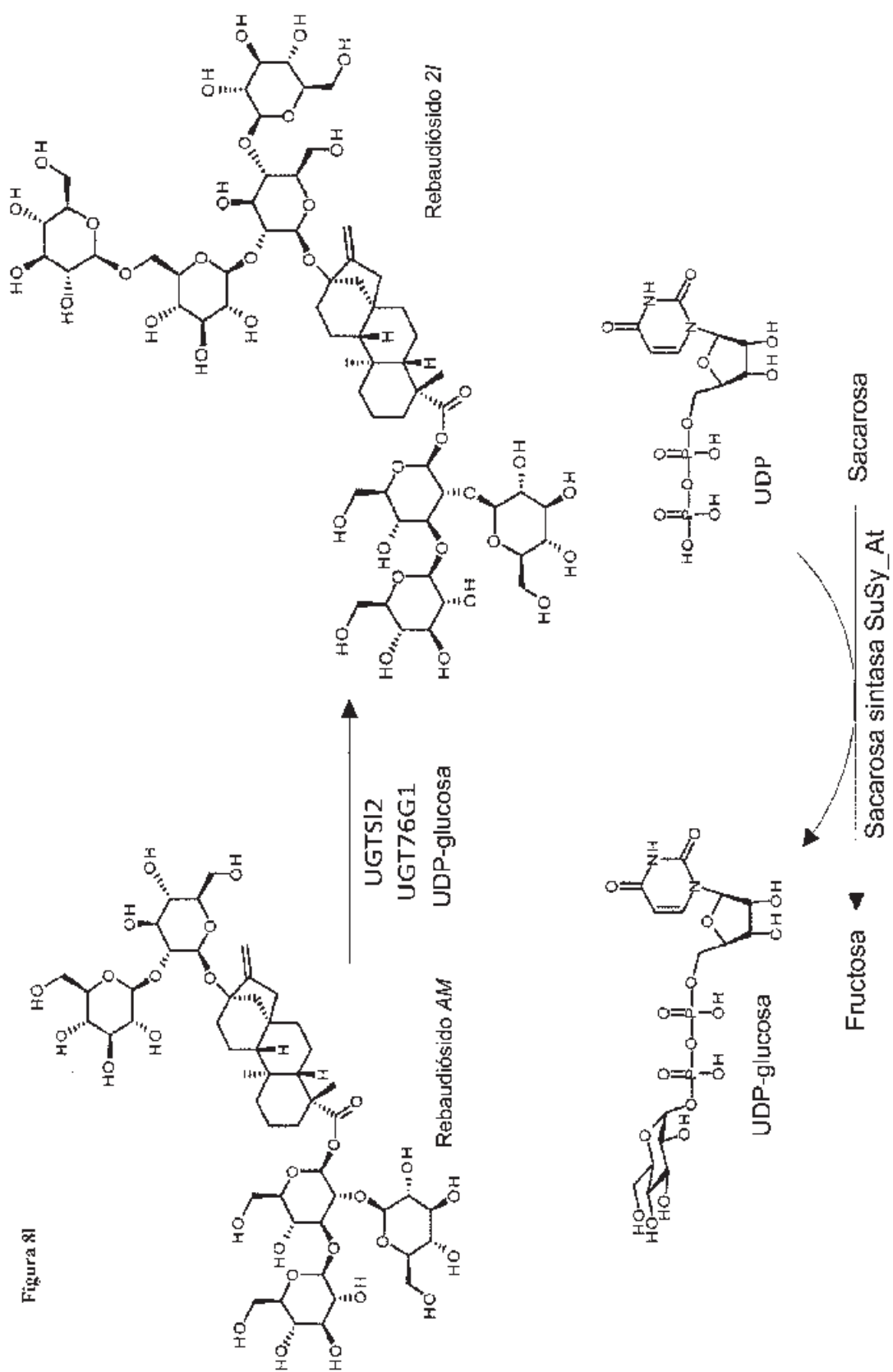


Figura 8m

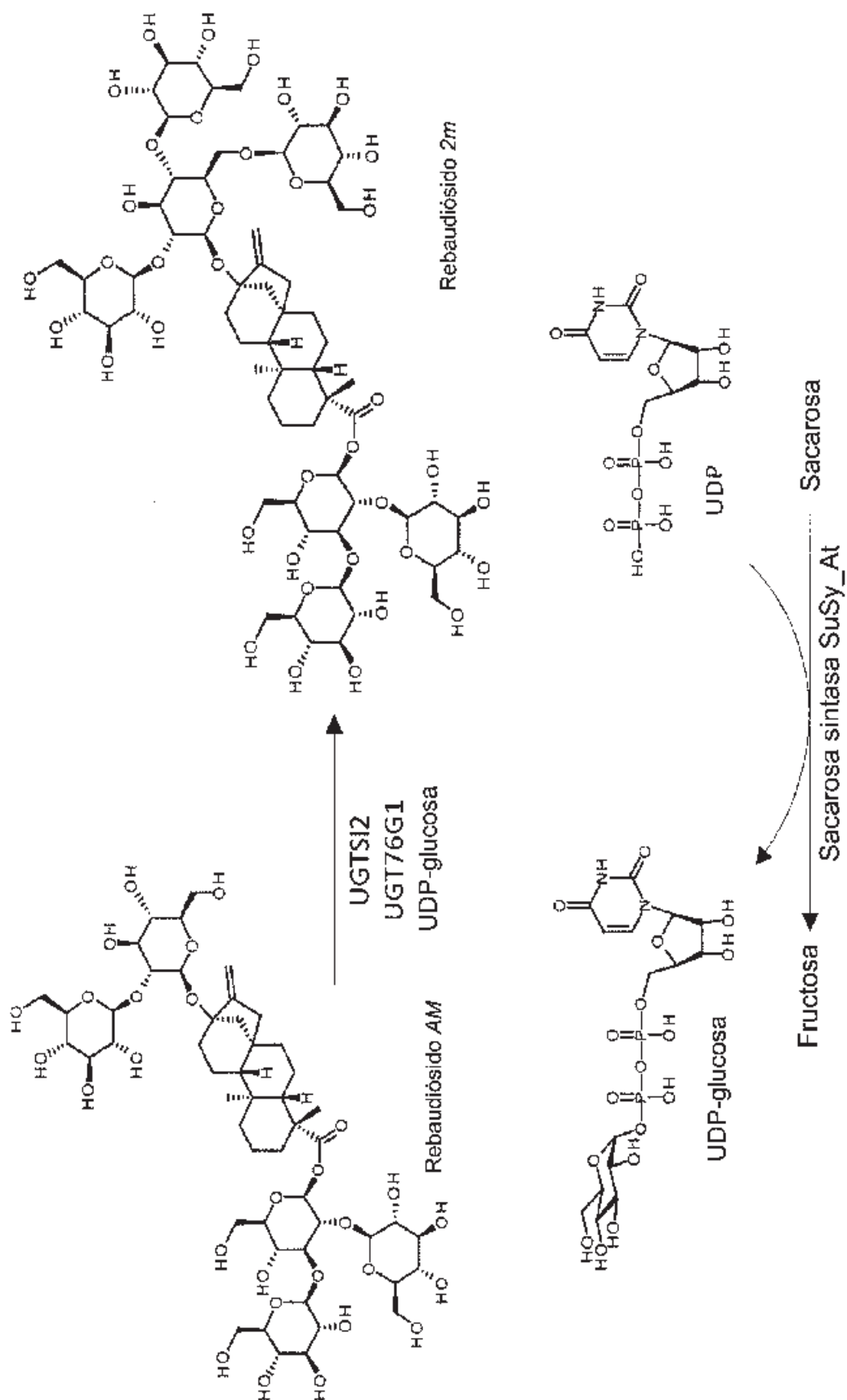


Figura 8n

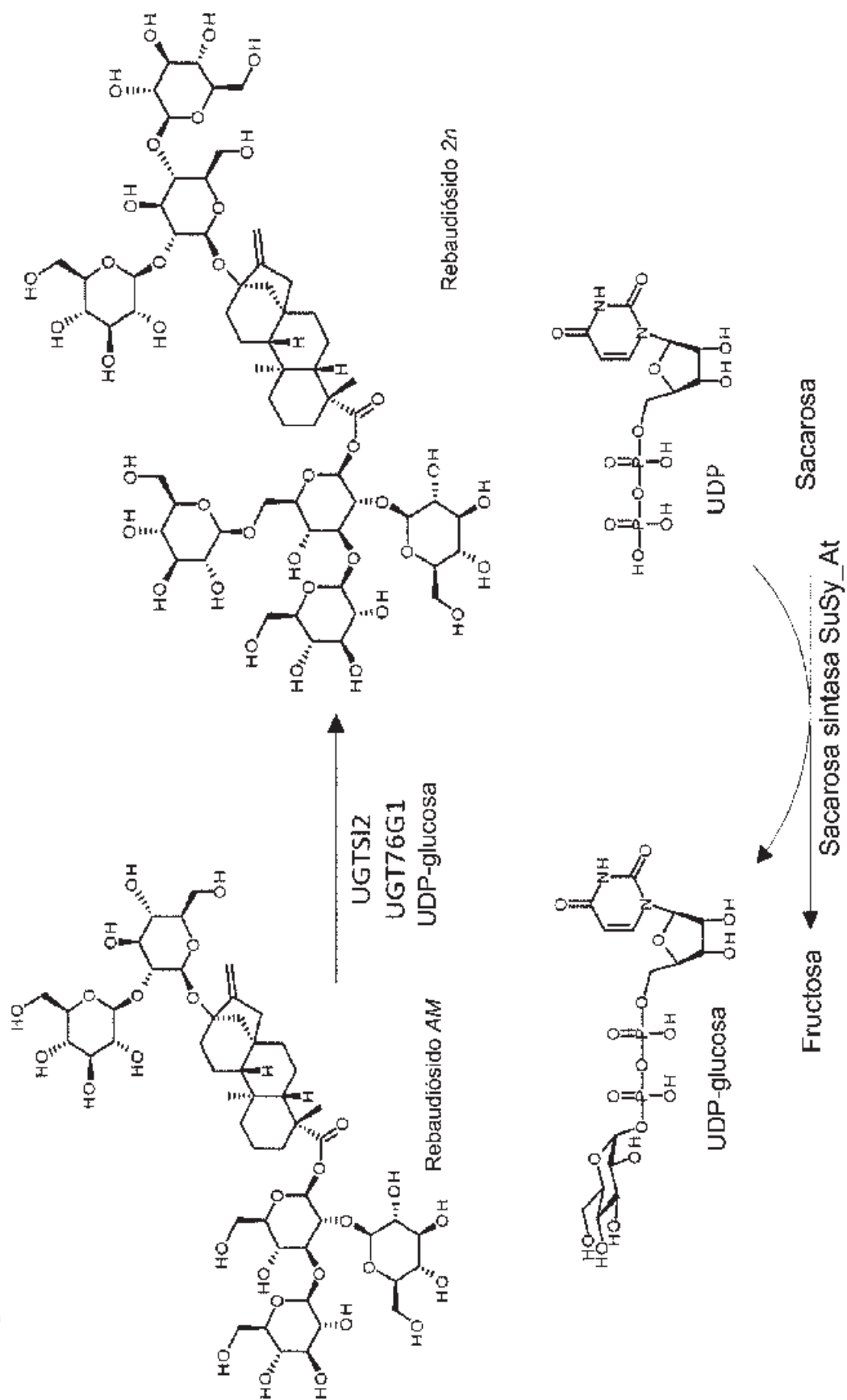


Figura 8o

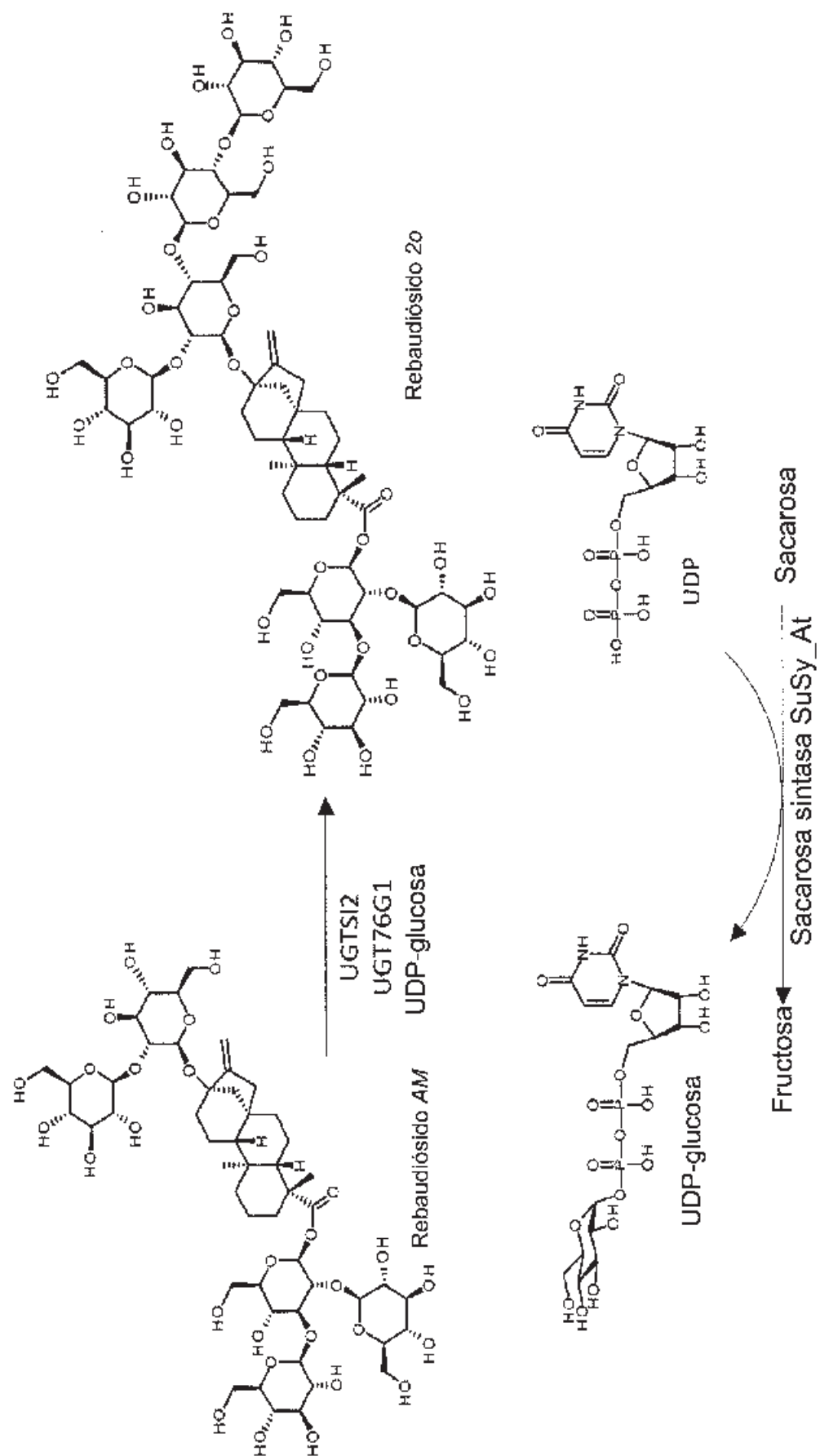


Figura 8p

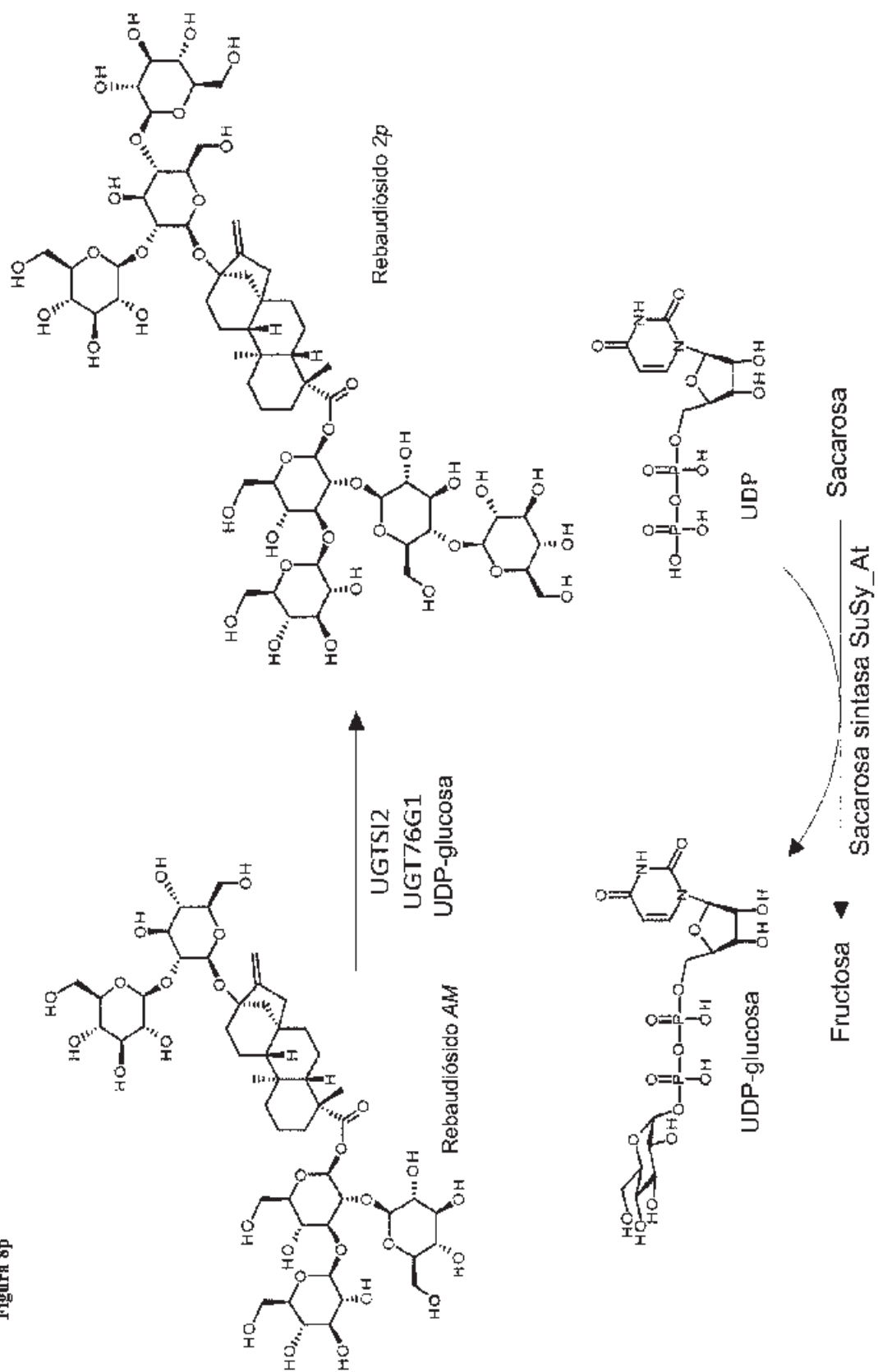


Figura 8q

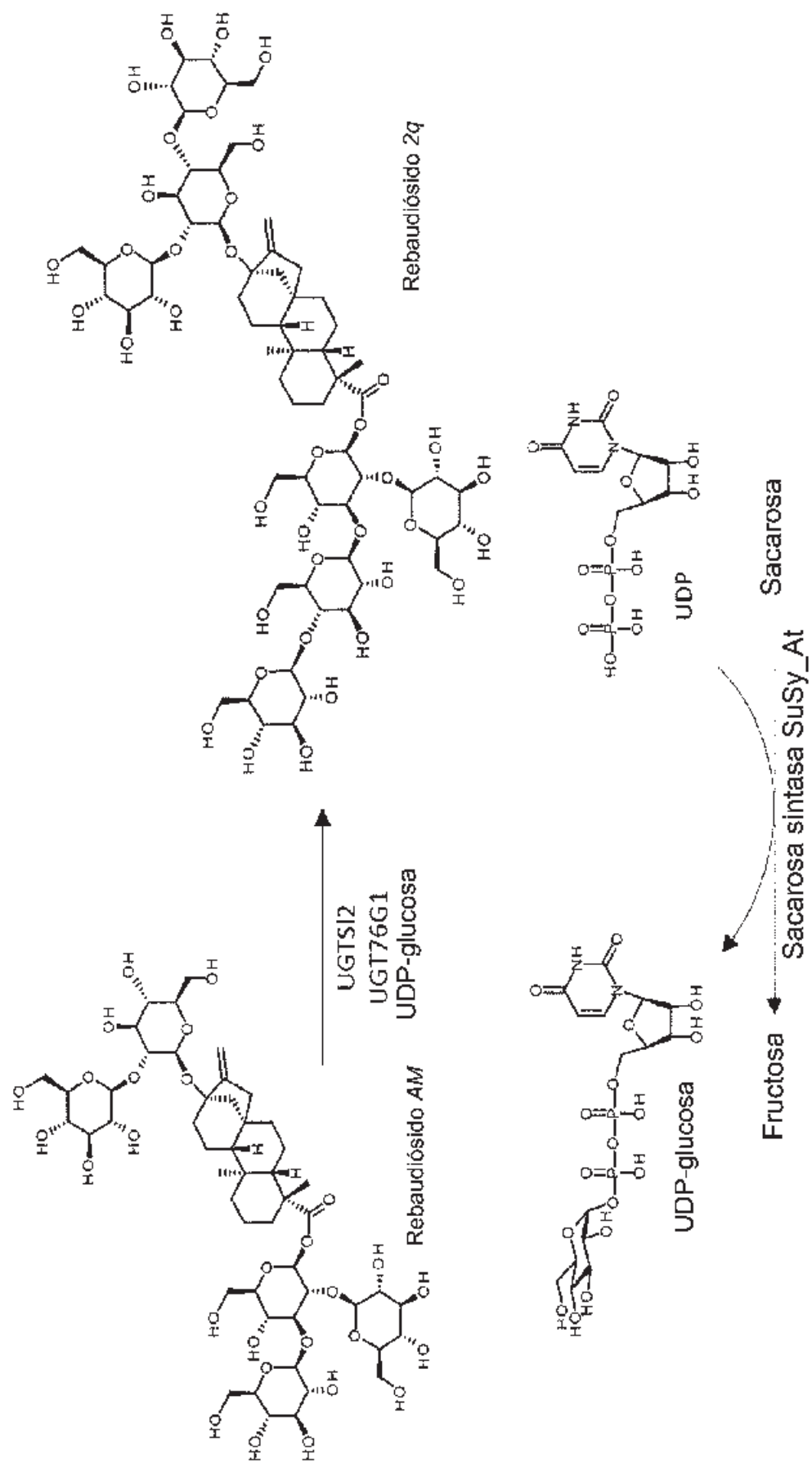


Figura 8r

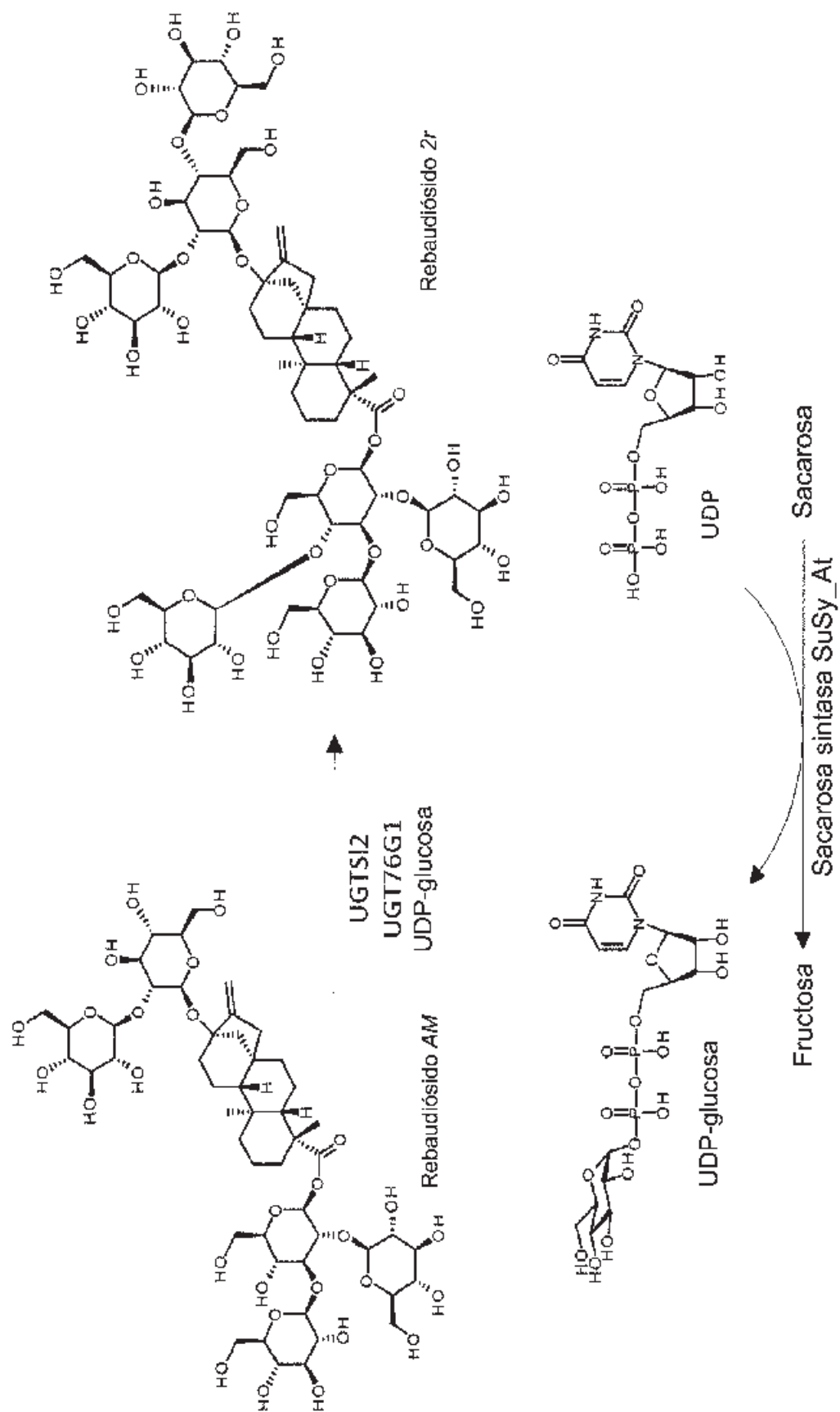


Figura 8s

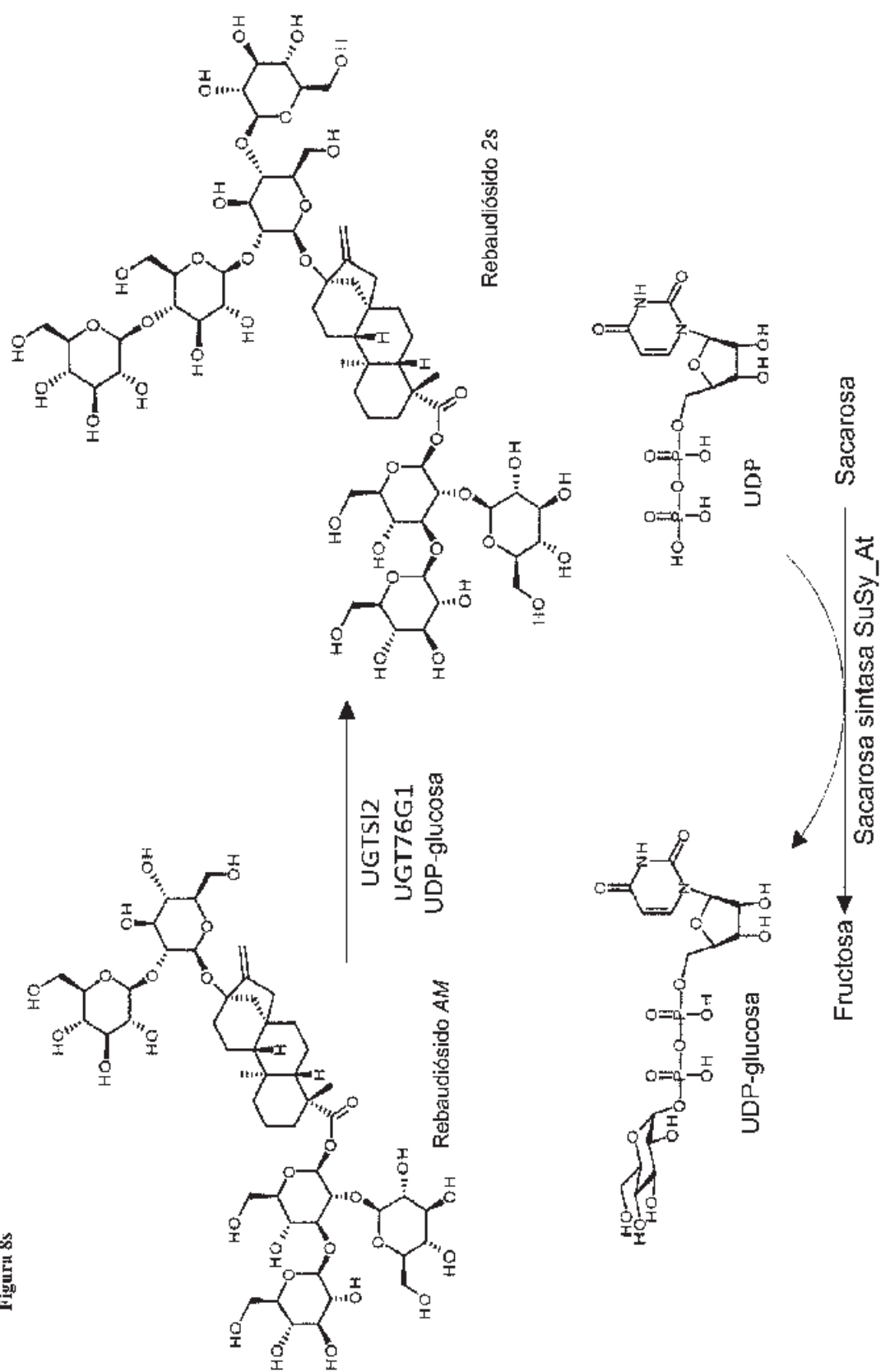


Figura 8t

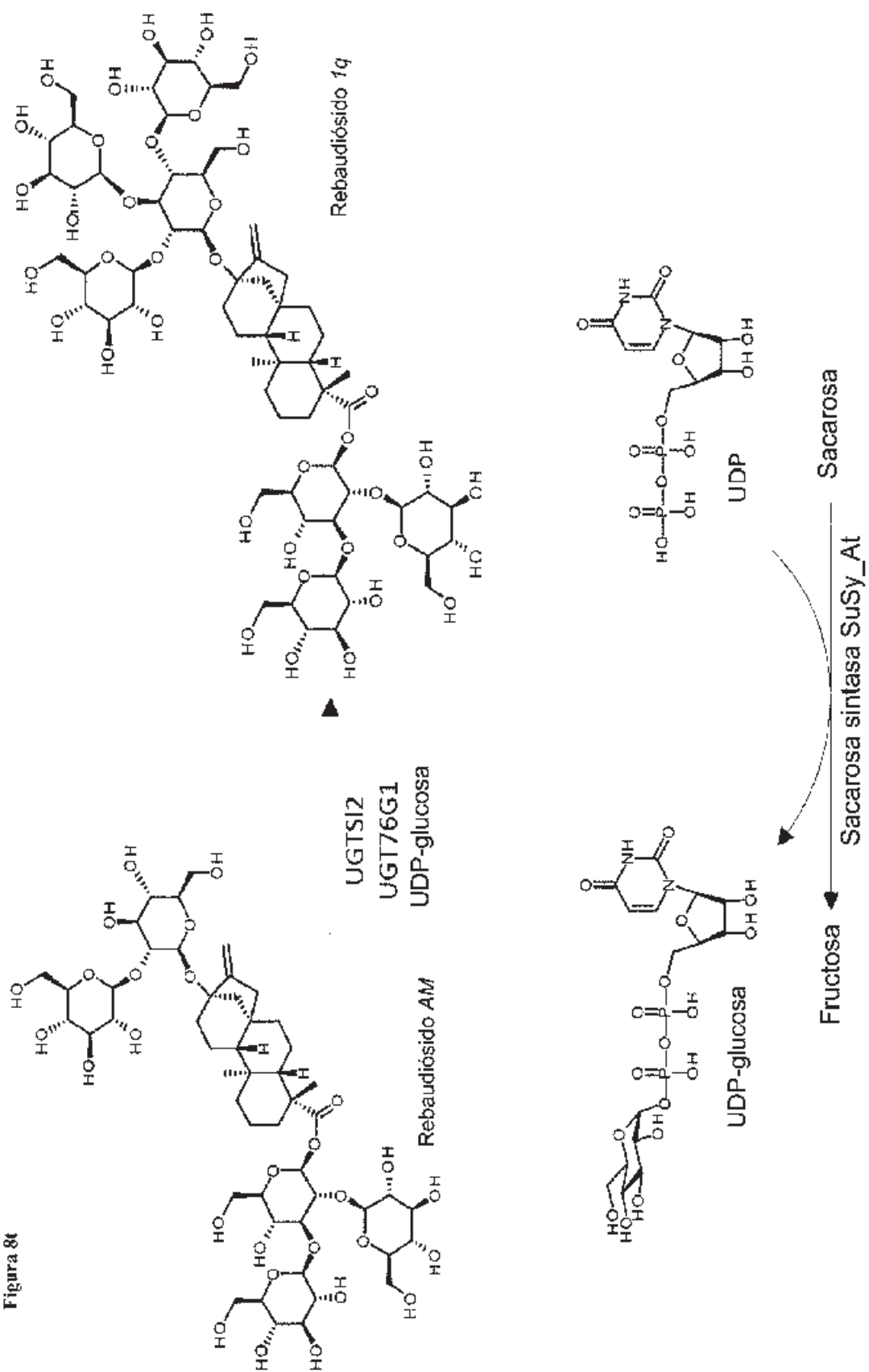


Figura 9a

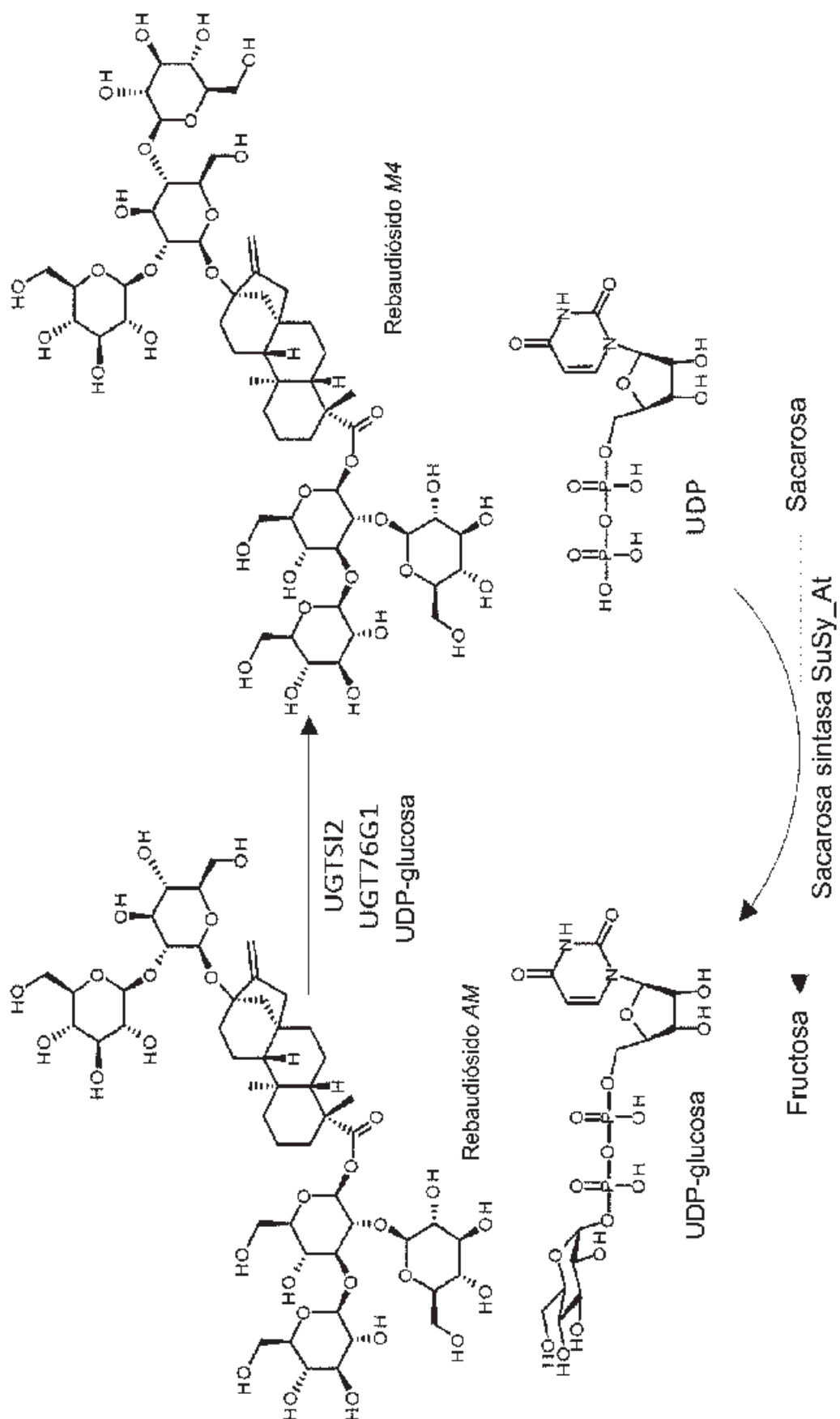
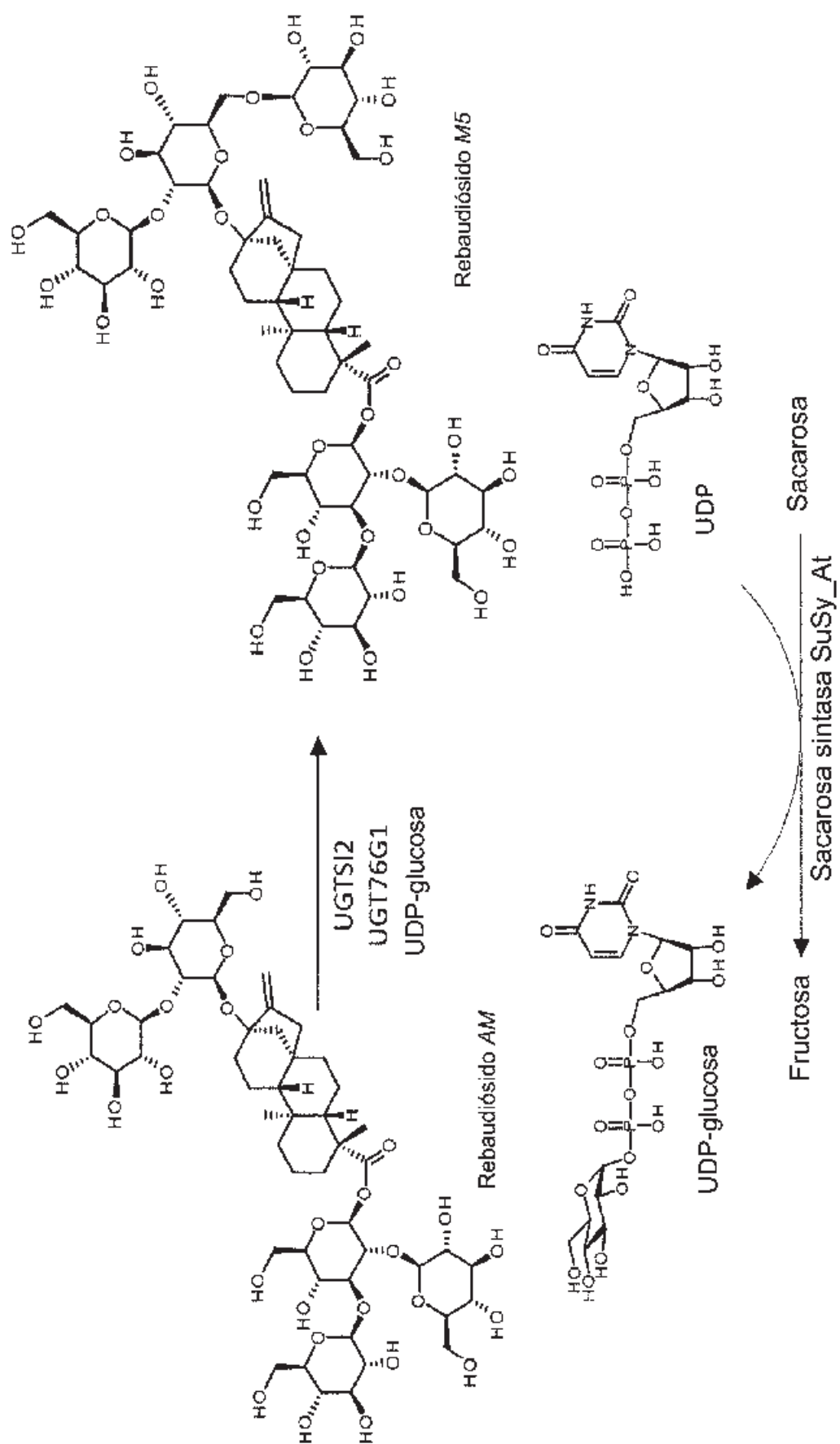


Figura 9b



Chemical reaction scheme showing the conversion of Rebaudiósido M4 to Rebaudiósido 2a by the enzyme UGT76G1. The reaction uses UDP-glucose as a cofactor, releasing UDP-glucose and producing Fructose. The reaction is catalyzed by Sacarosa sintasa SuSy_At.

Rebaudiósido M4

UGT76G1

UDP-glucose

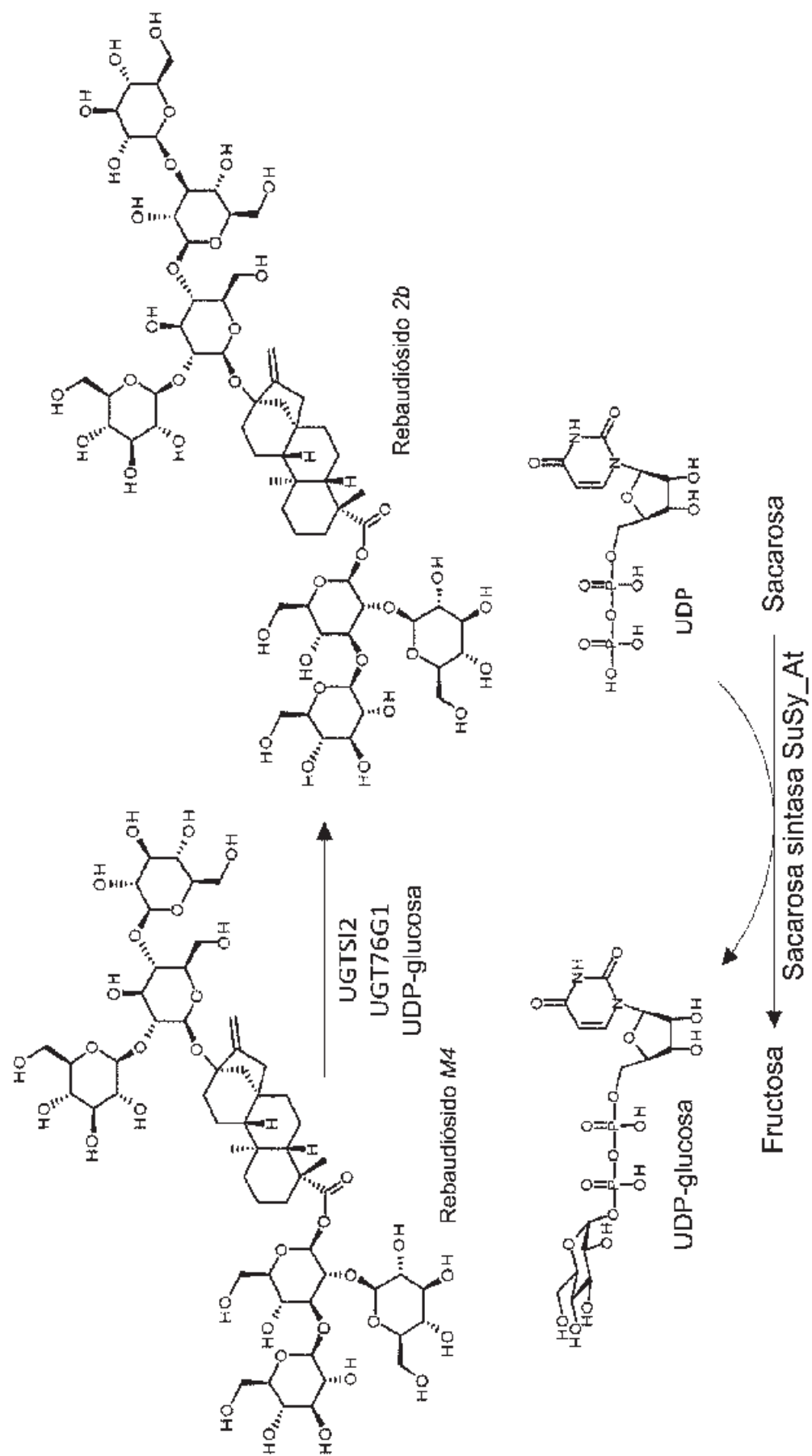
Rebaudiósido 2a

UDP-glucose

Fructose

Sacarosa sintasa SuSy_At

Figura 10b



Rebaudioside M4

UGT76G1

UDP-glucose

Rebaudioside 2c

UDP

Fructose

Saccharose sintasa SuSy_At

Figura 10d

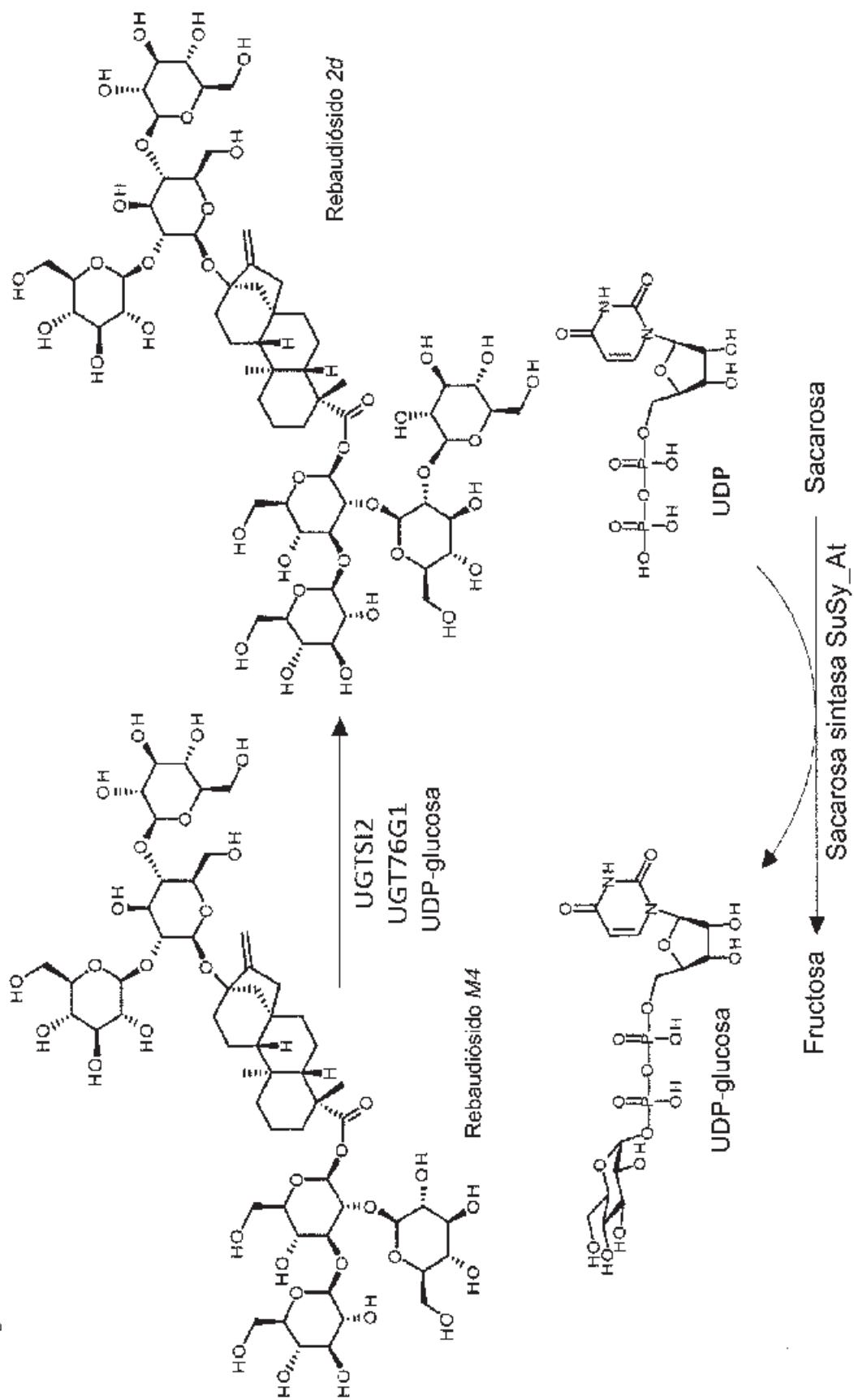


Figura 10e

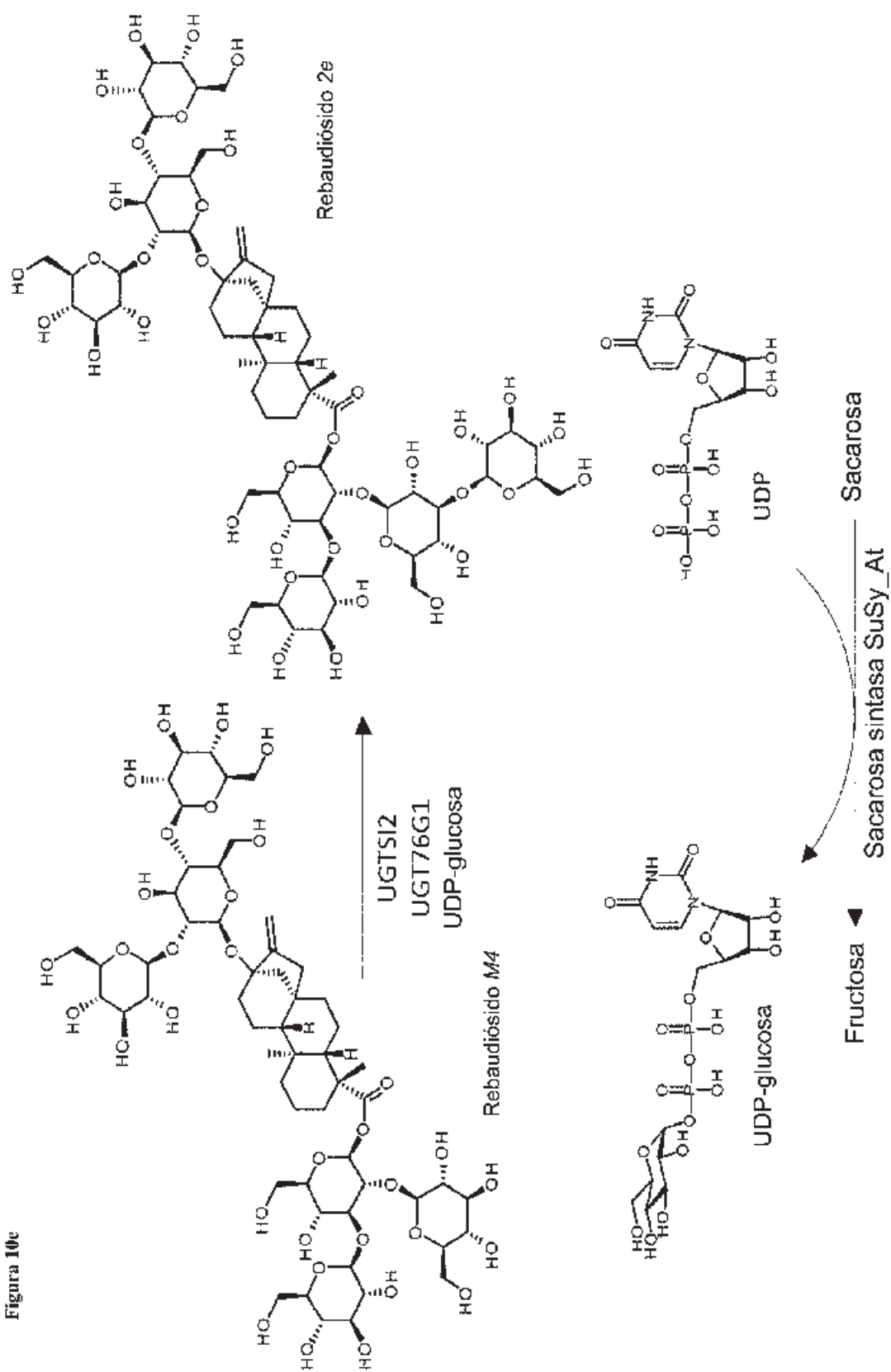


Figura 10f

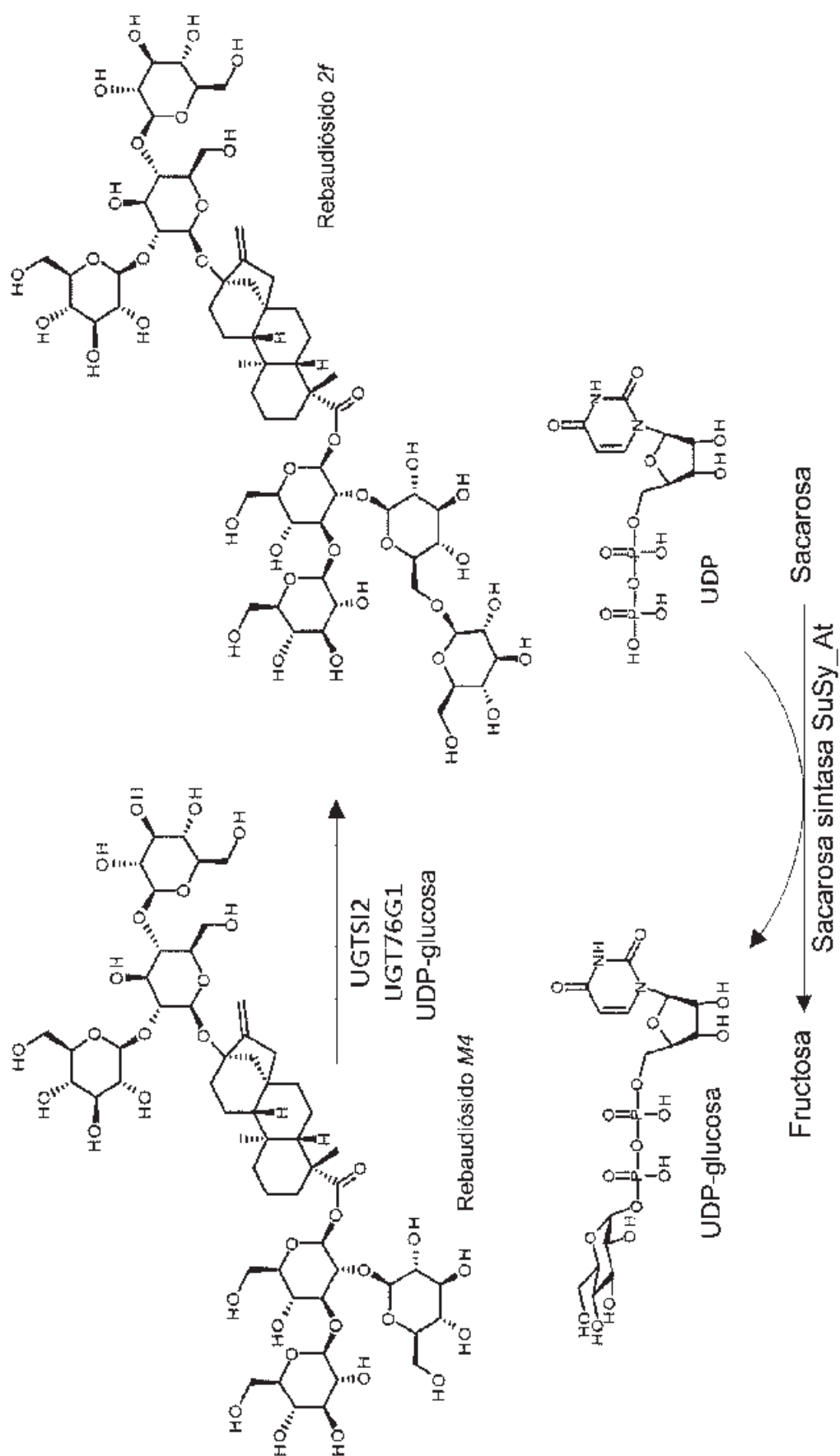


Figura 10g

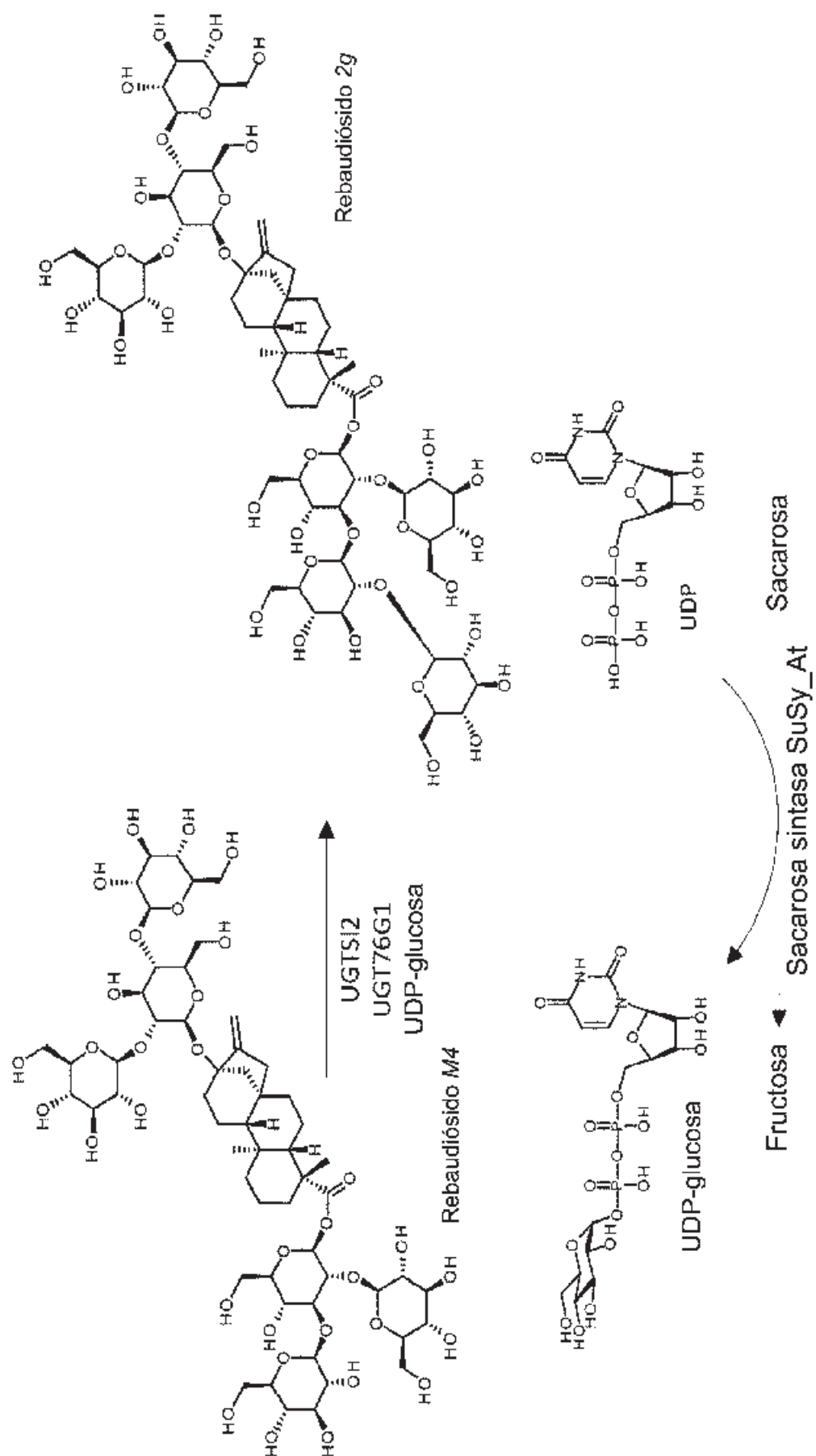


Figura 10h

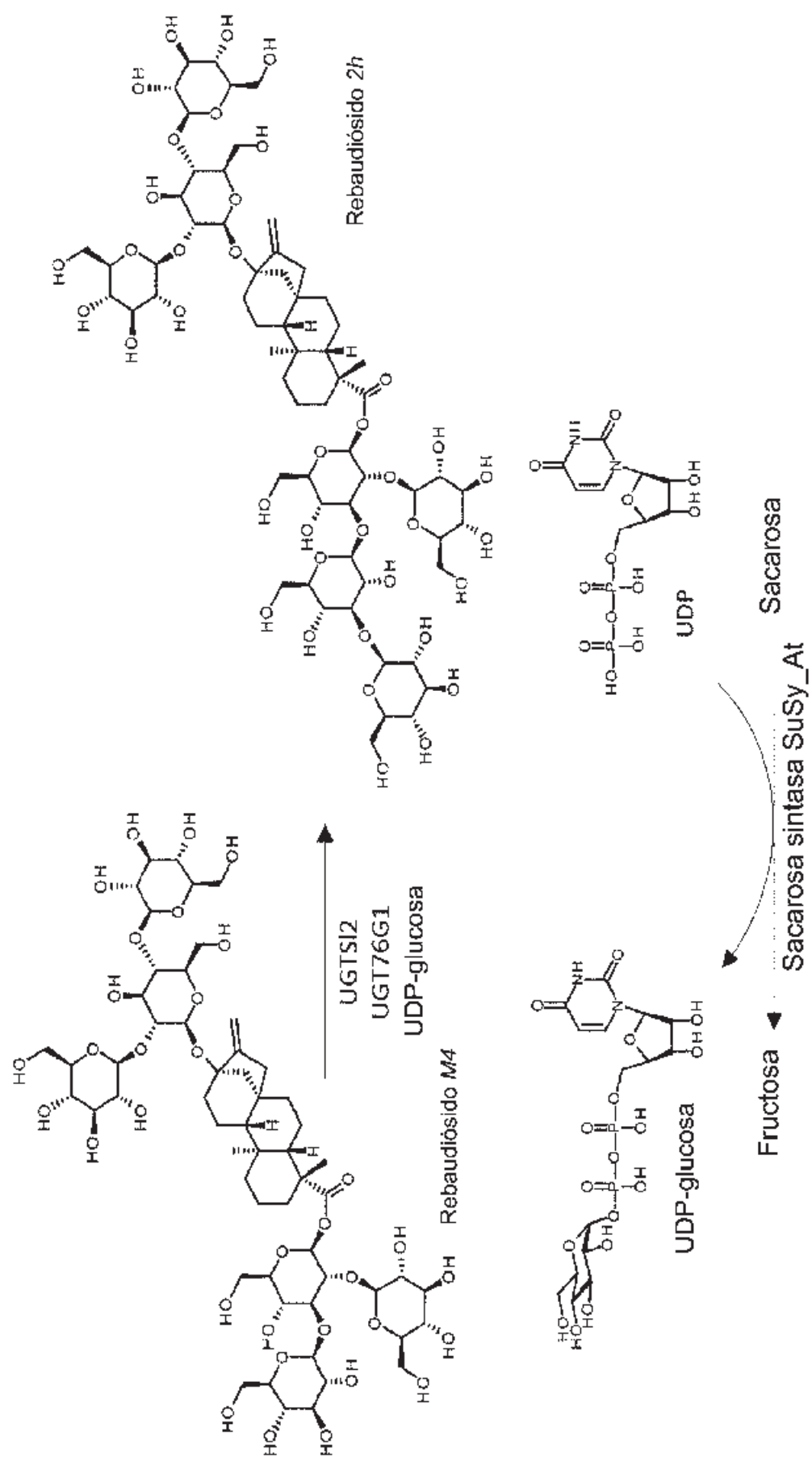


Figura 10i

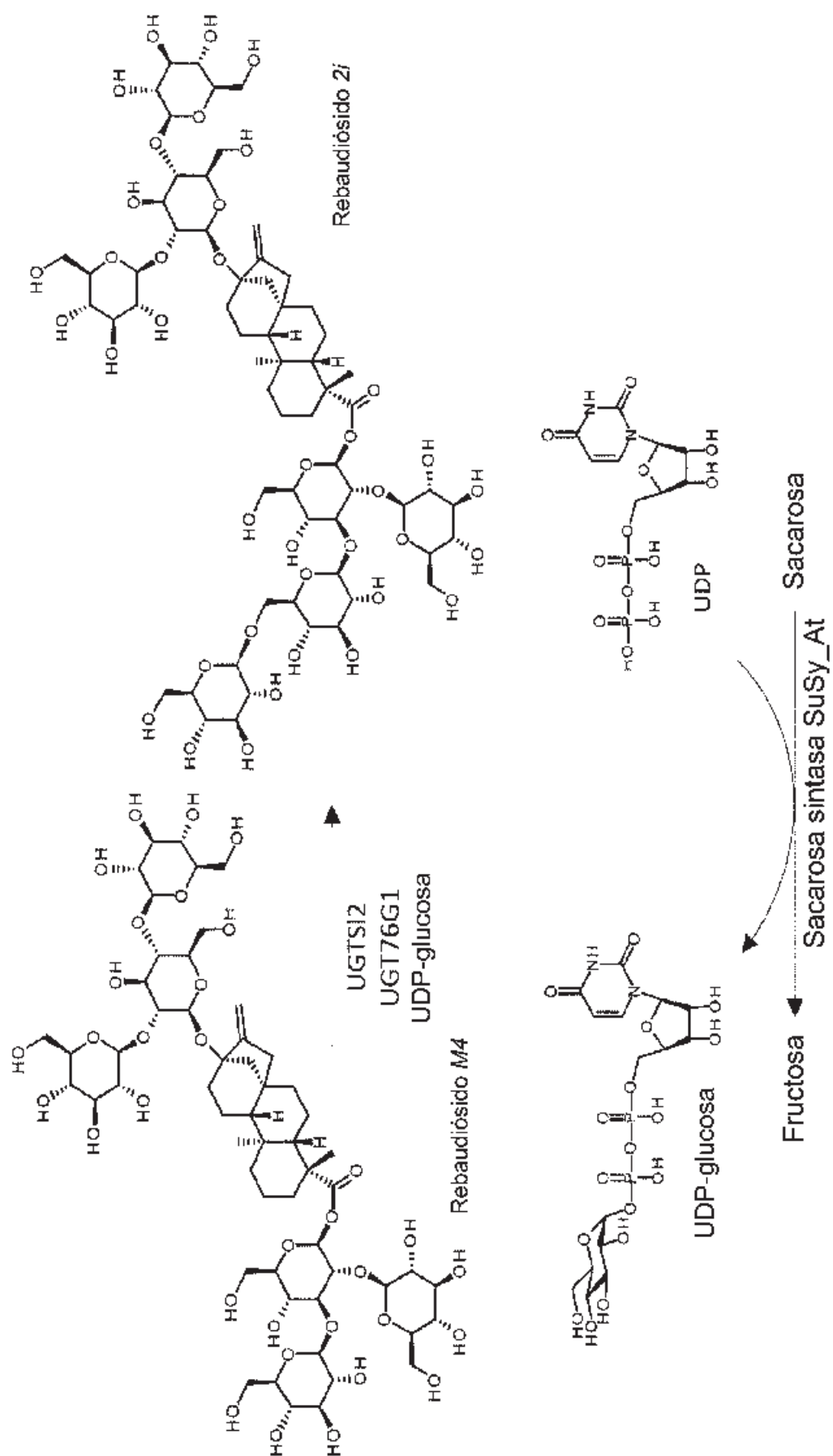


Figura 10j

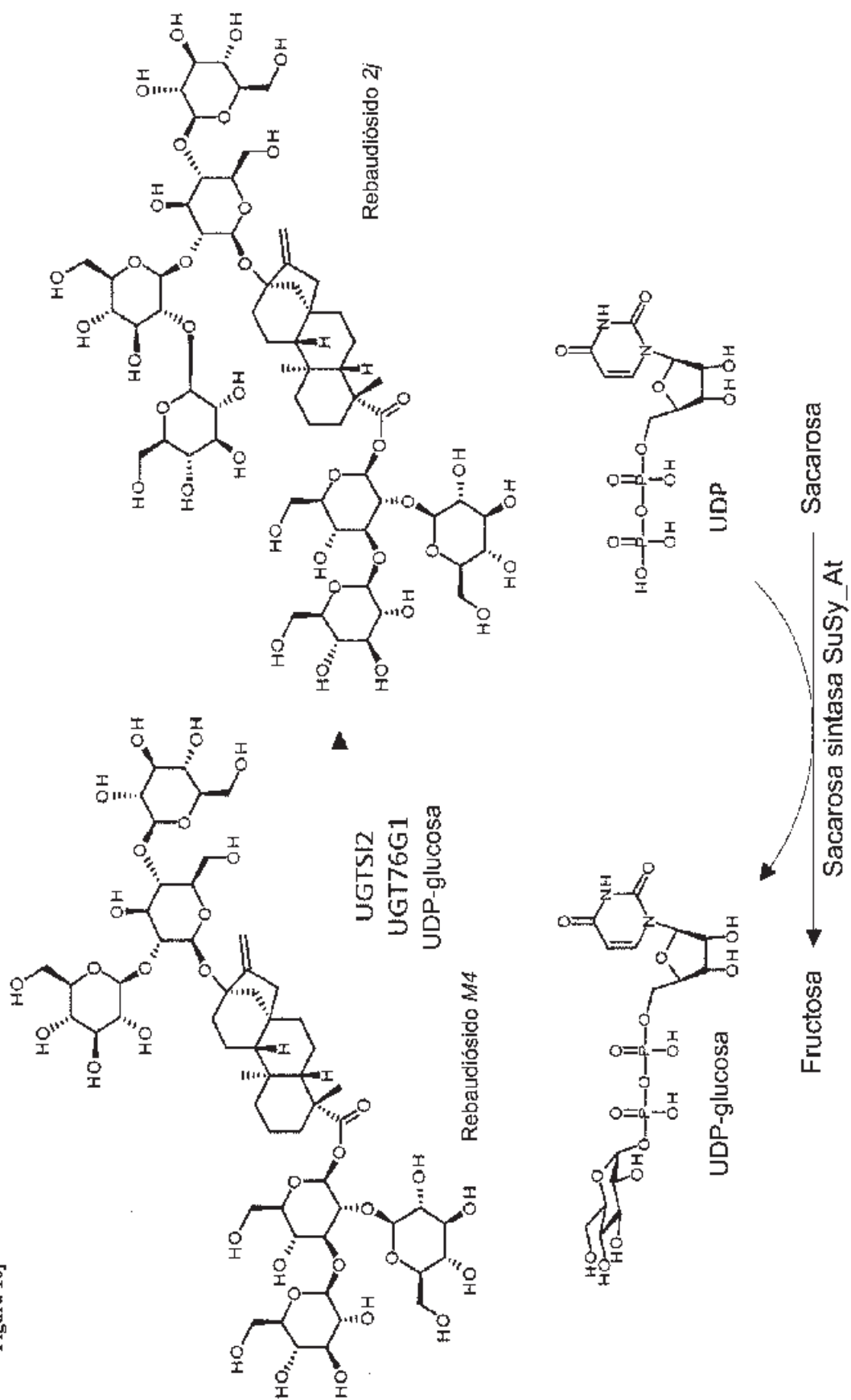


Figura 10k

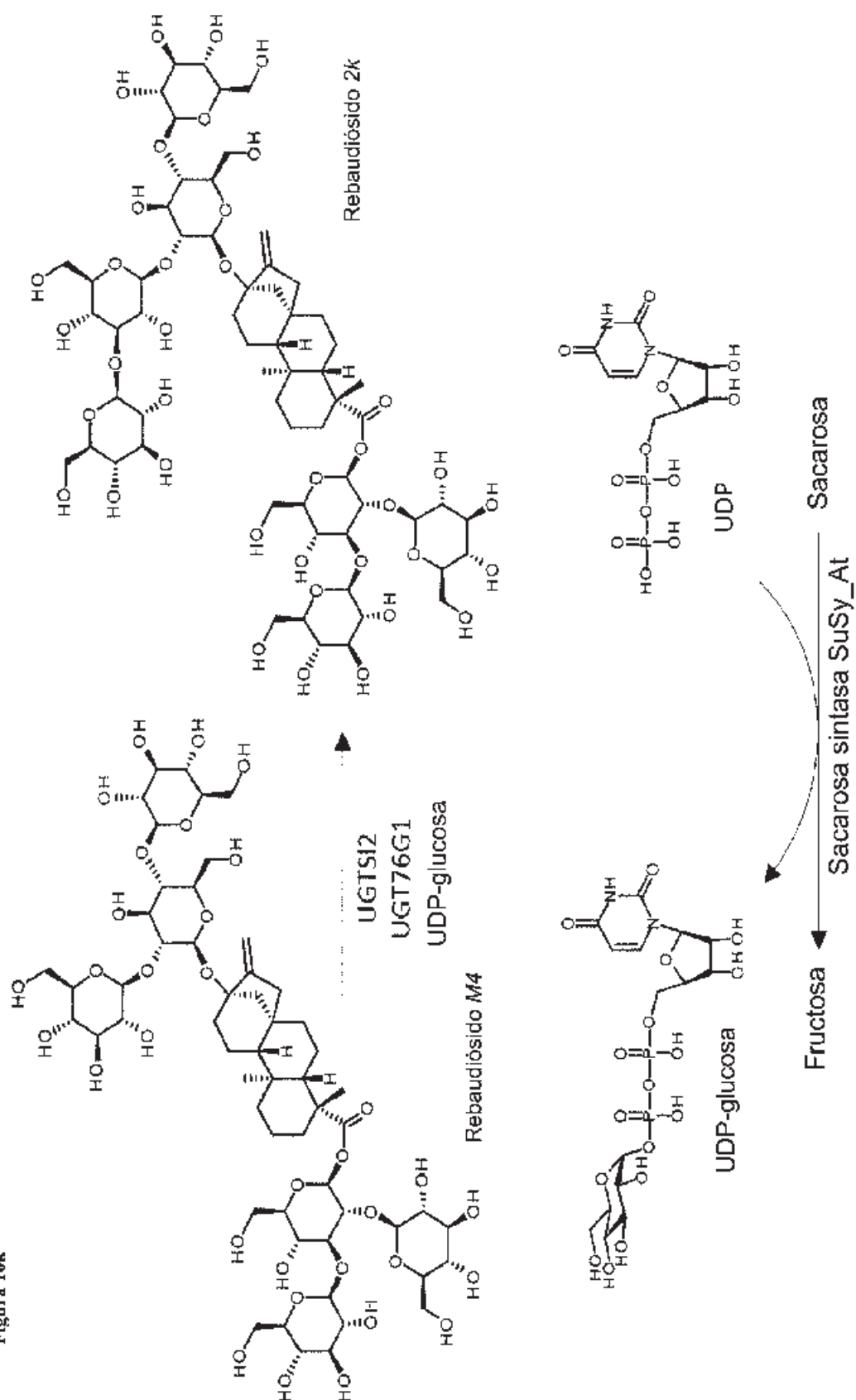


Figura 101

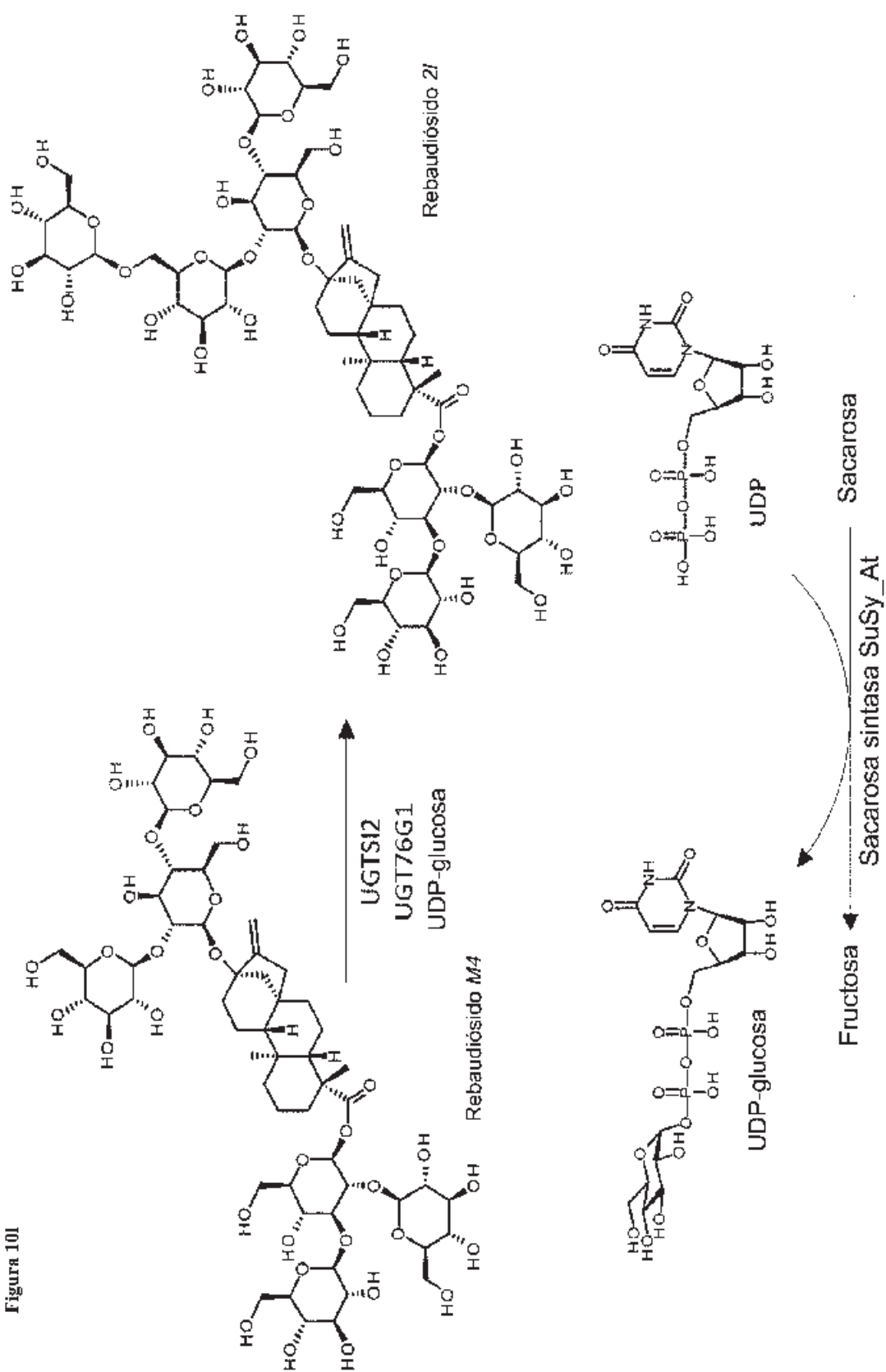


Figura 10m

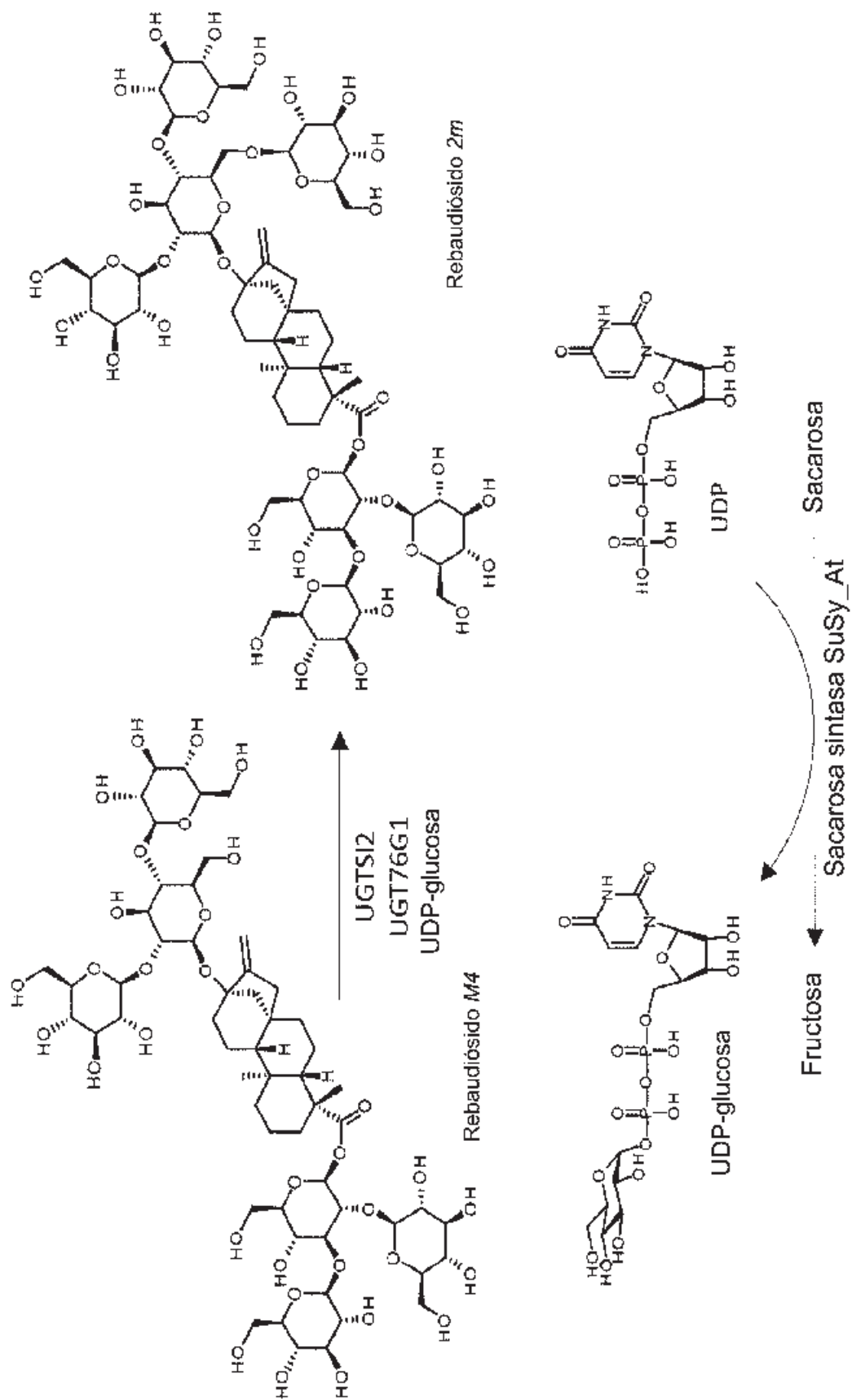


Figura 10n

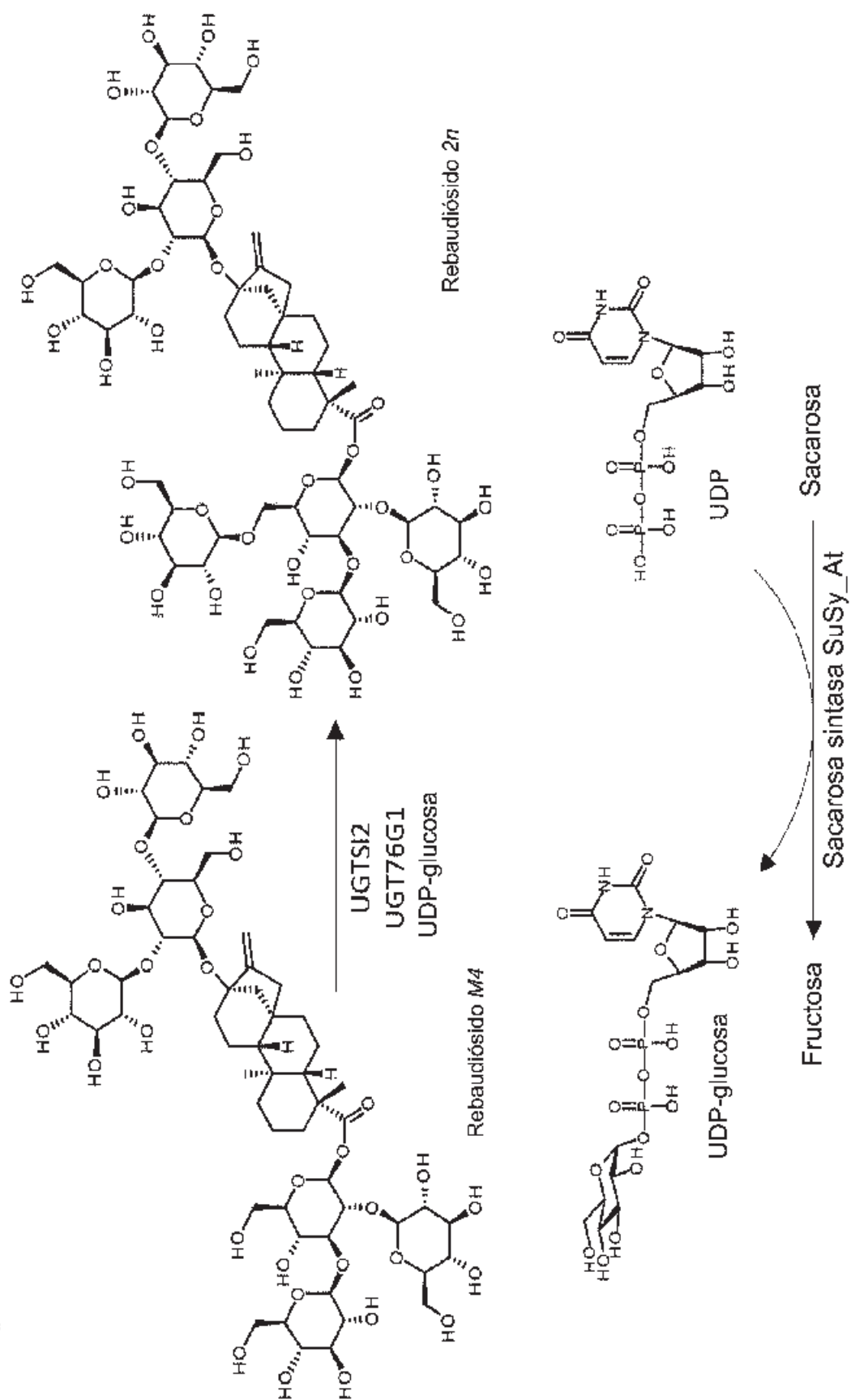


Figura 14b

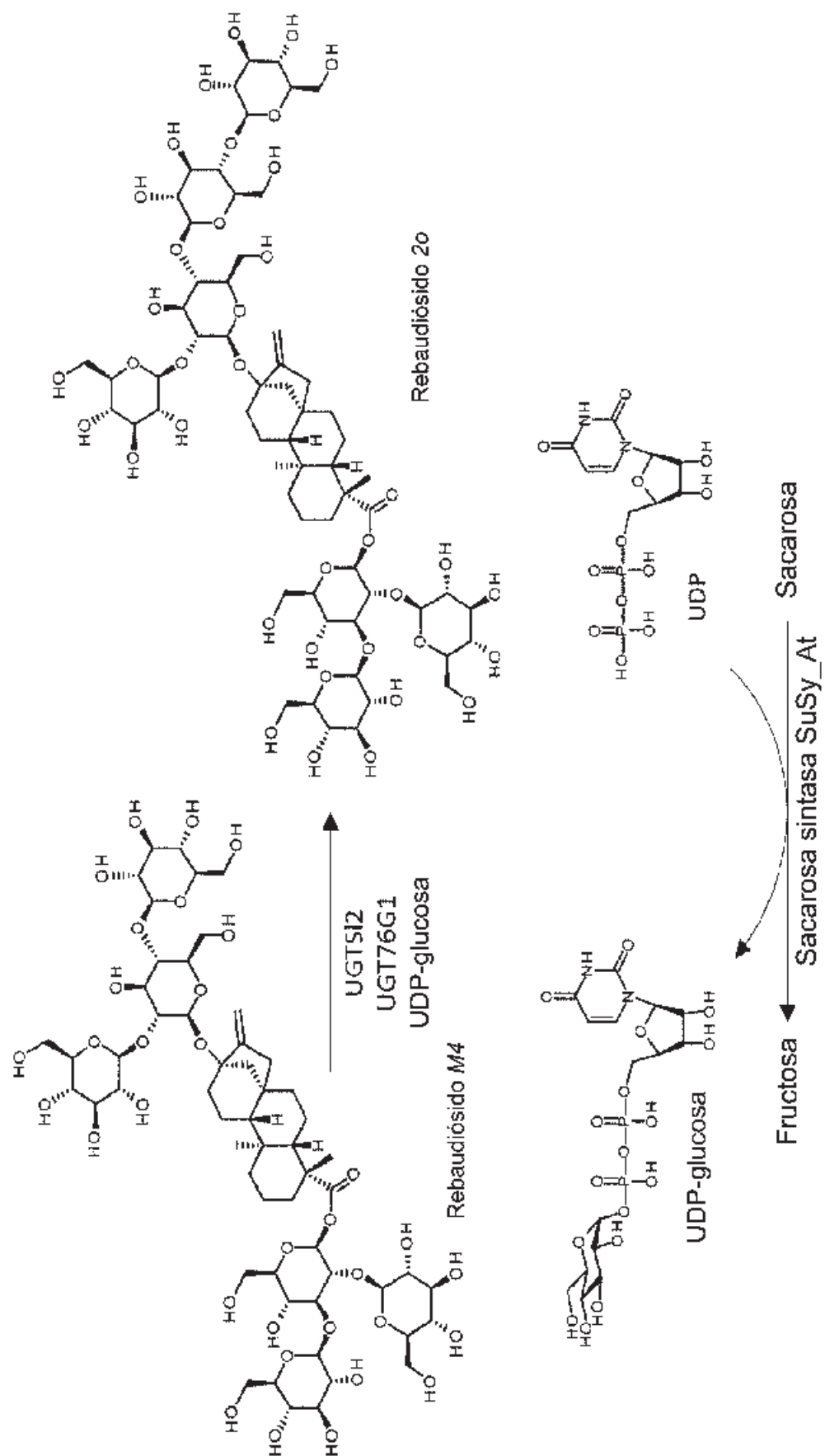


Figura 10p

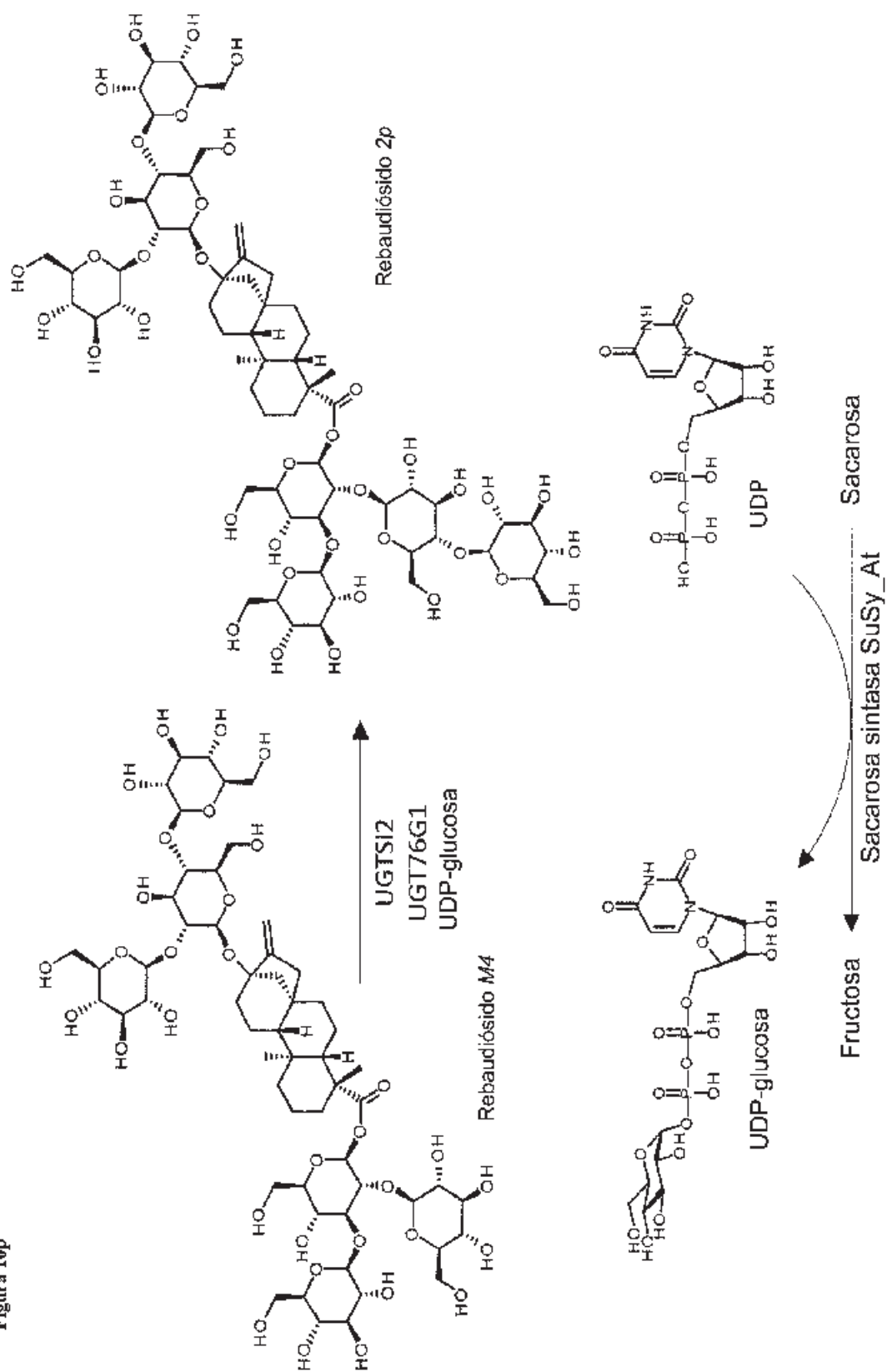


Figura 10q

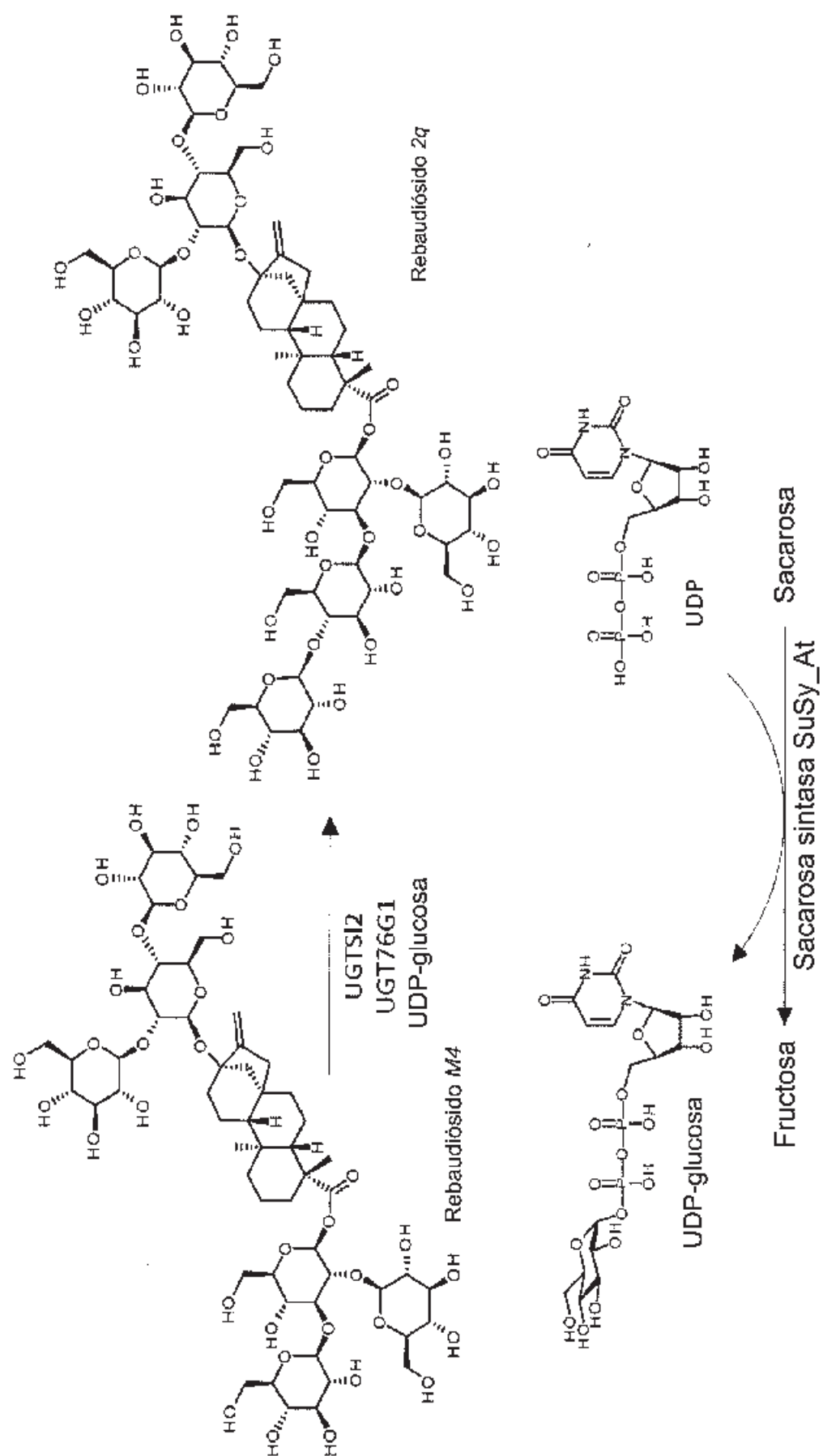
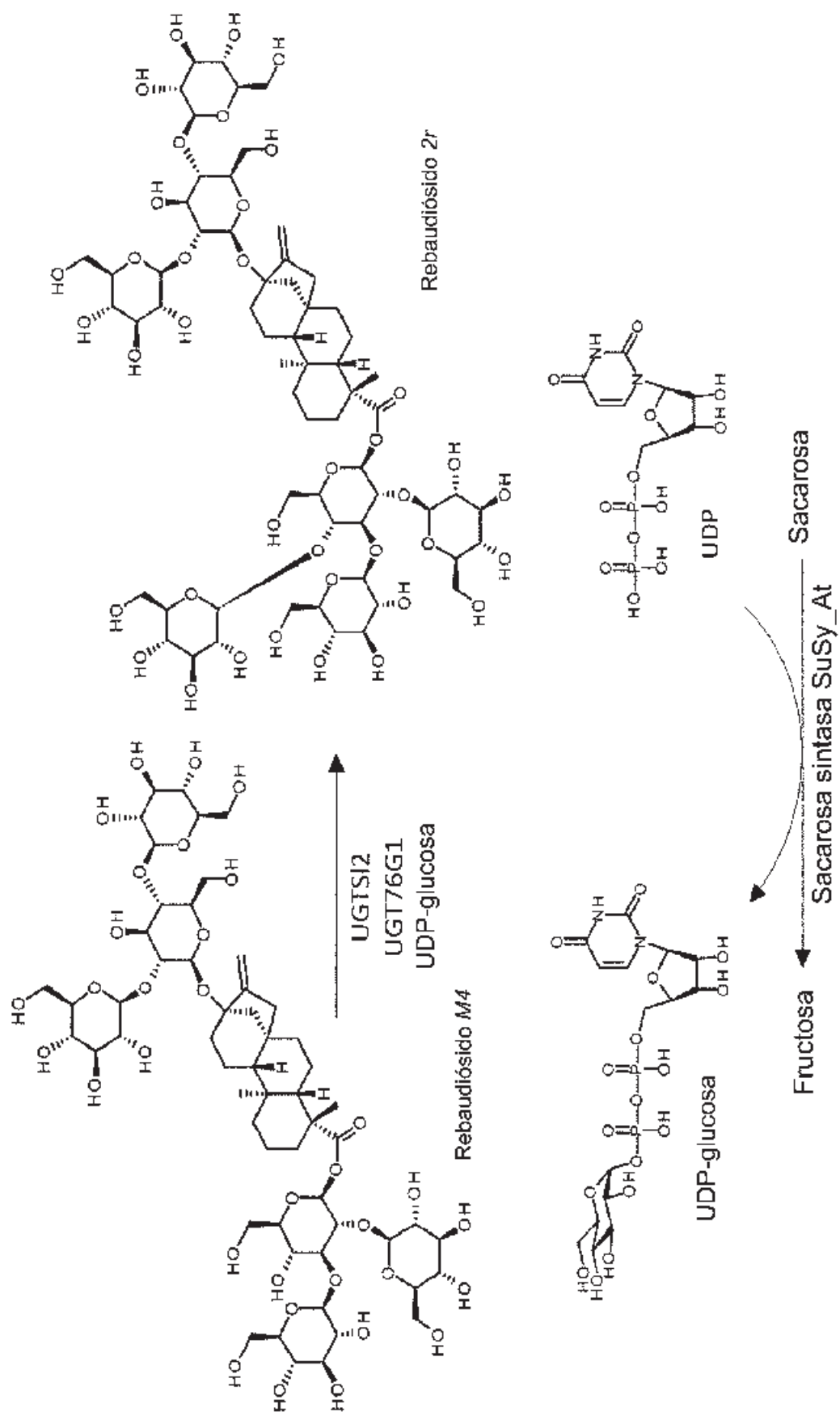


Figura 10r



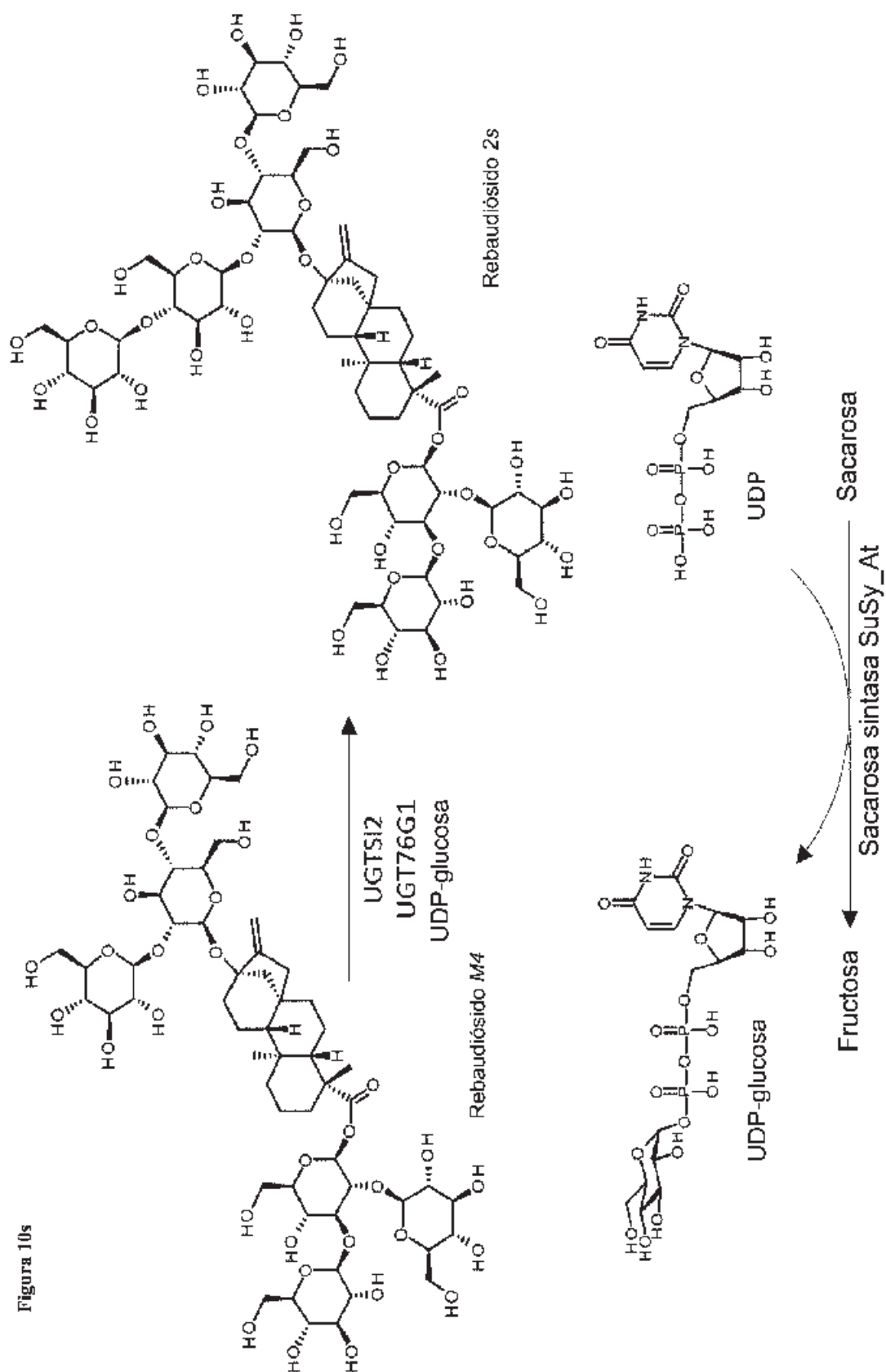


Figura 10t

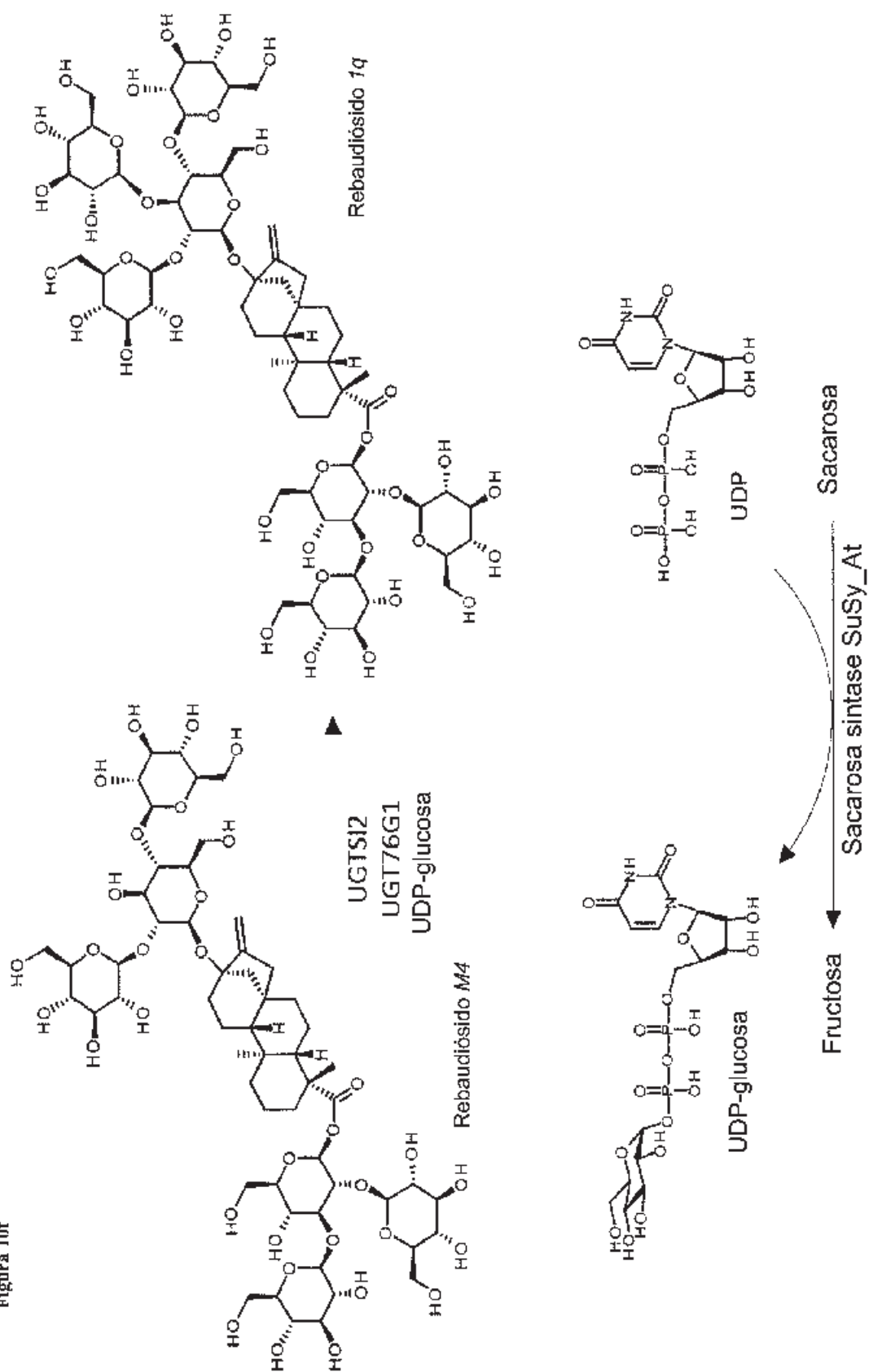


Figura 11a

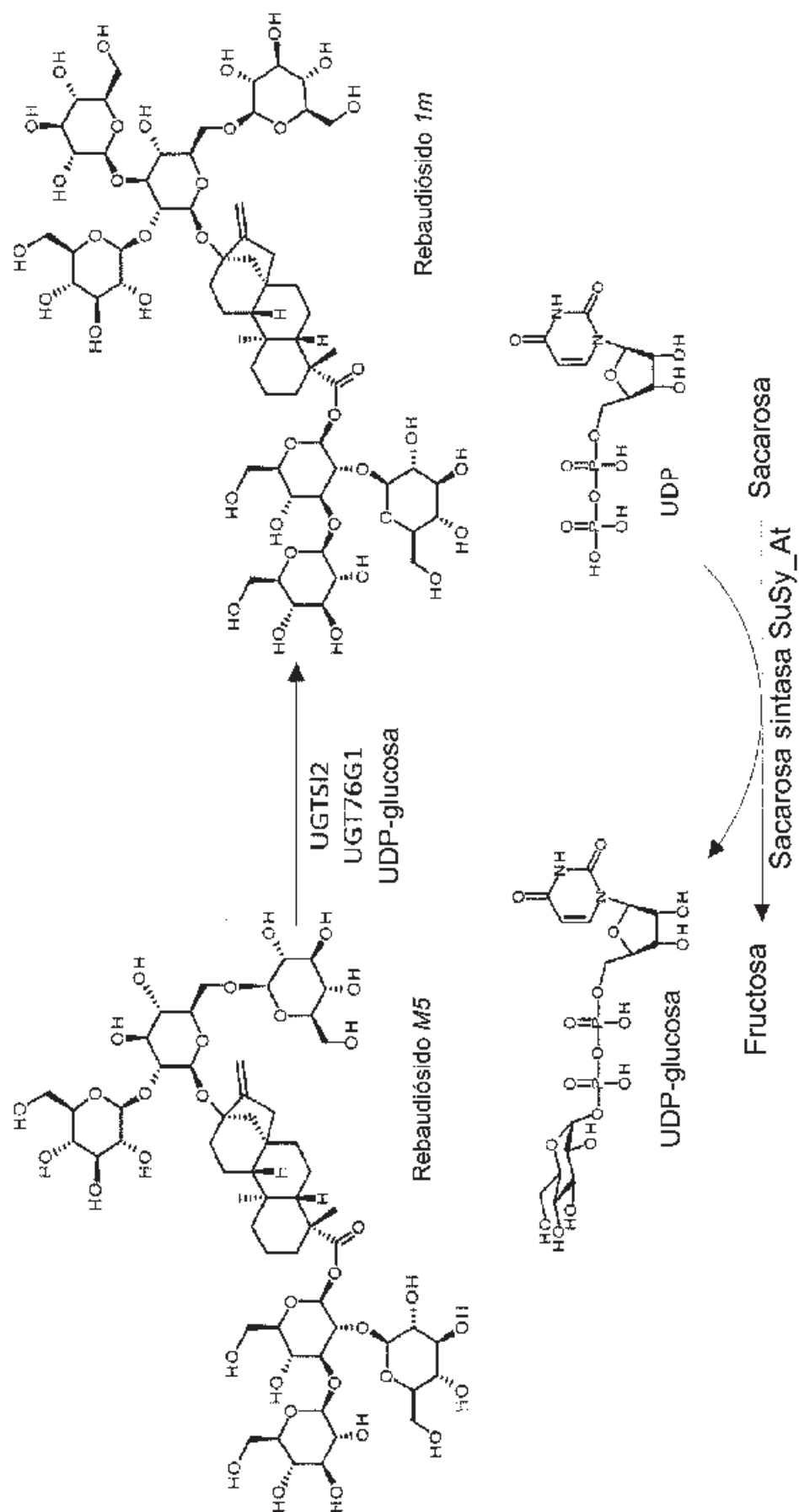
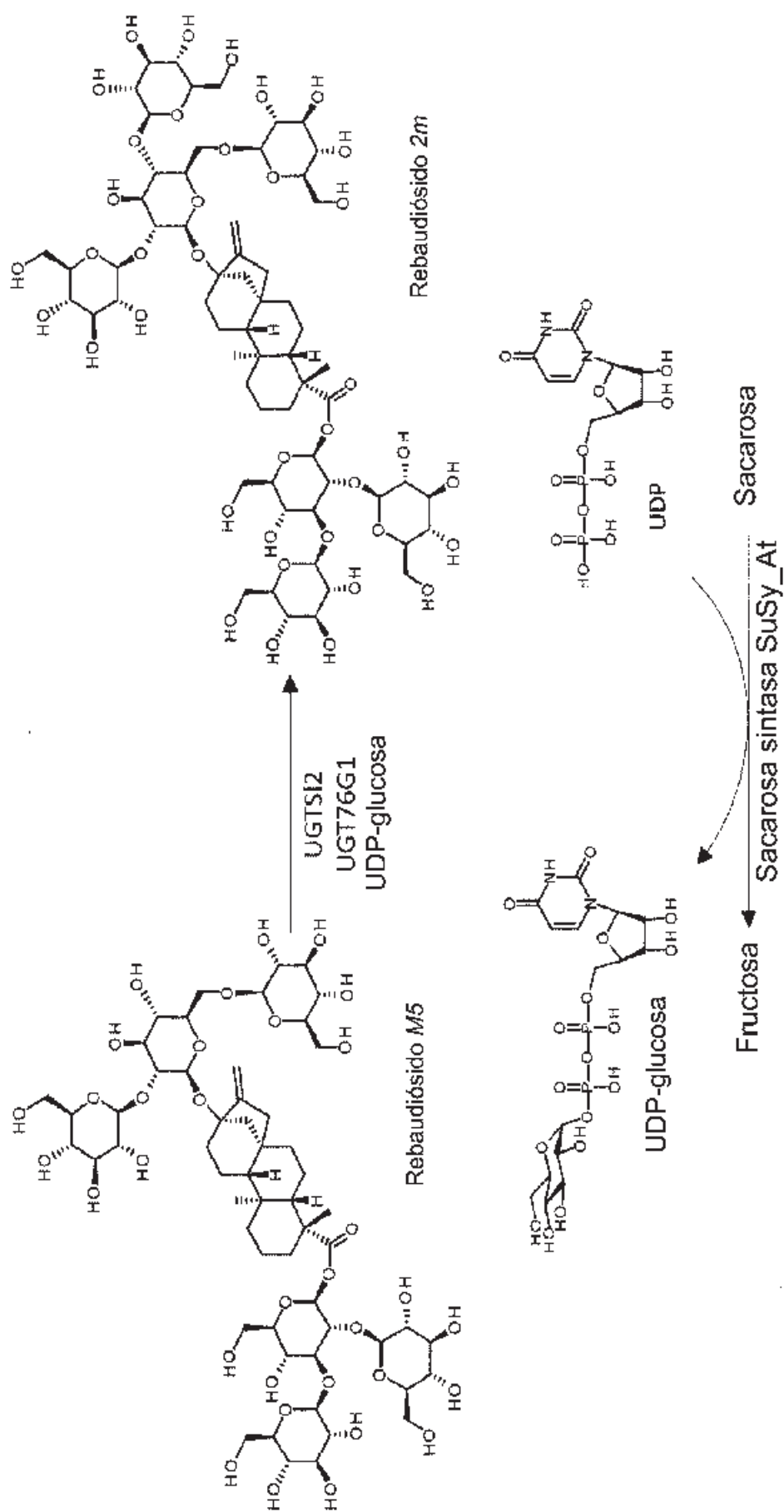


Figura 11b



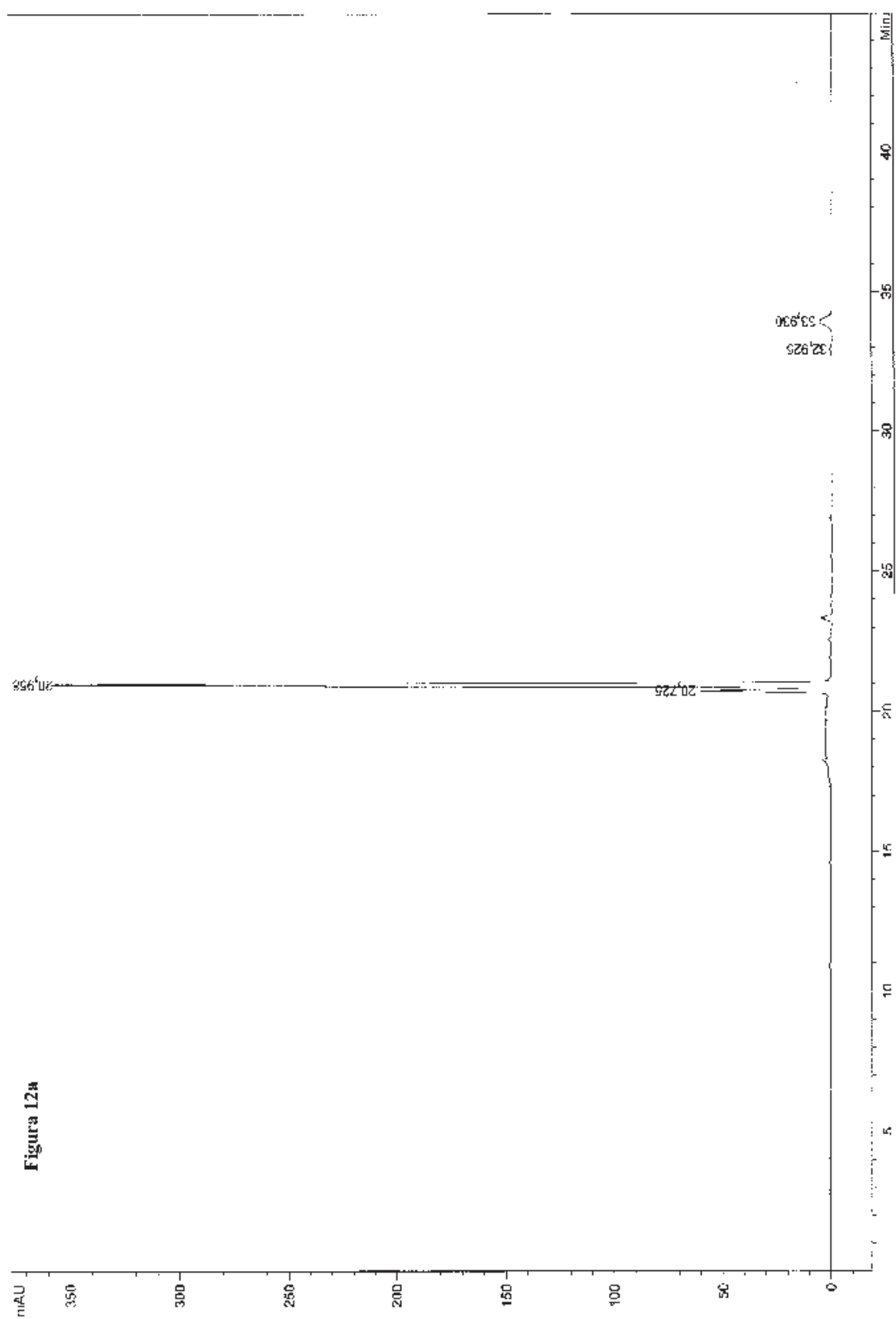
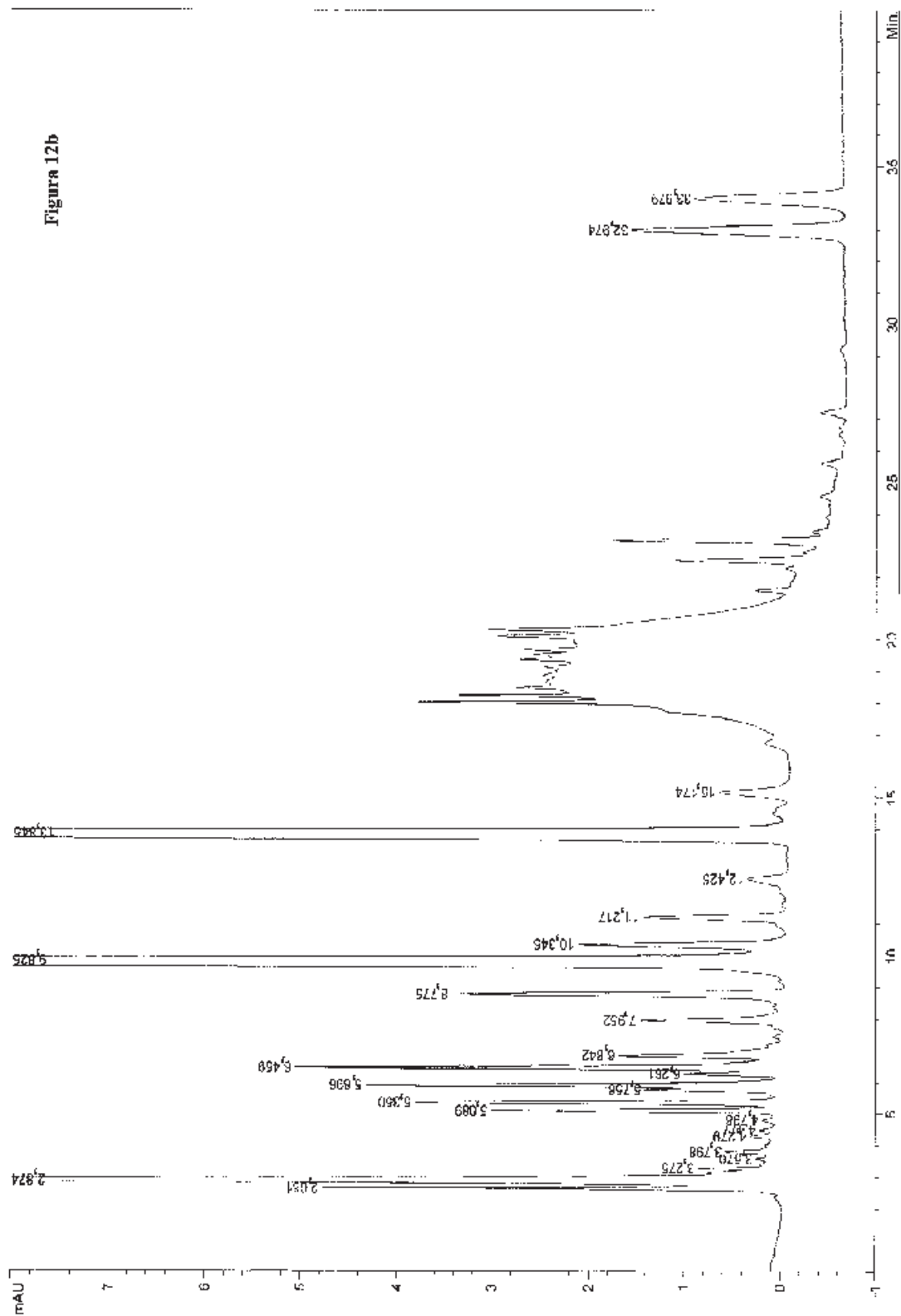
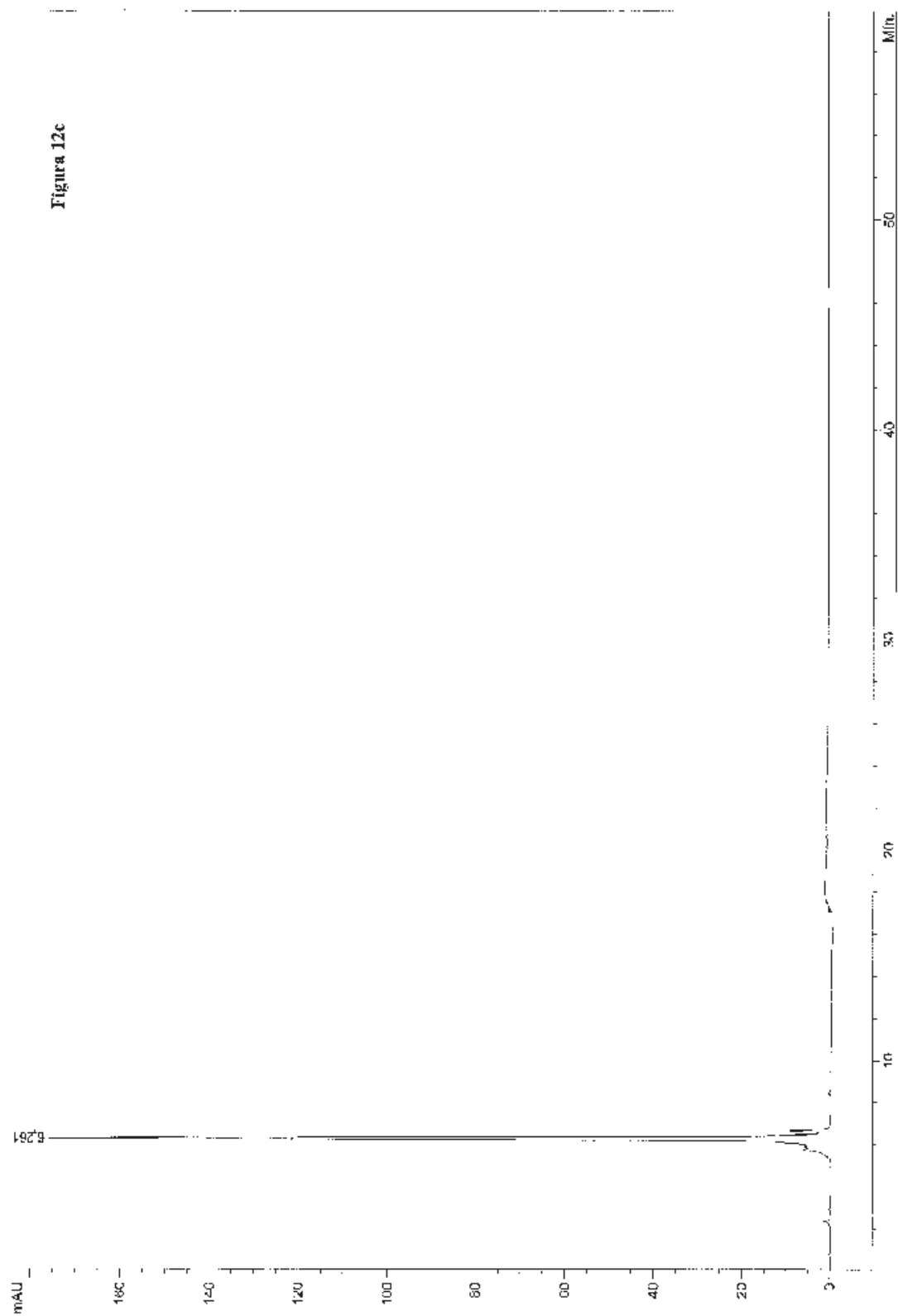
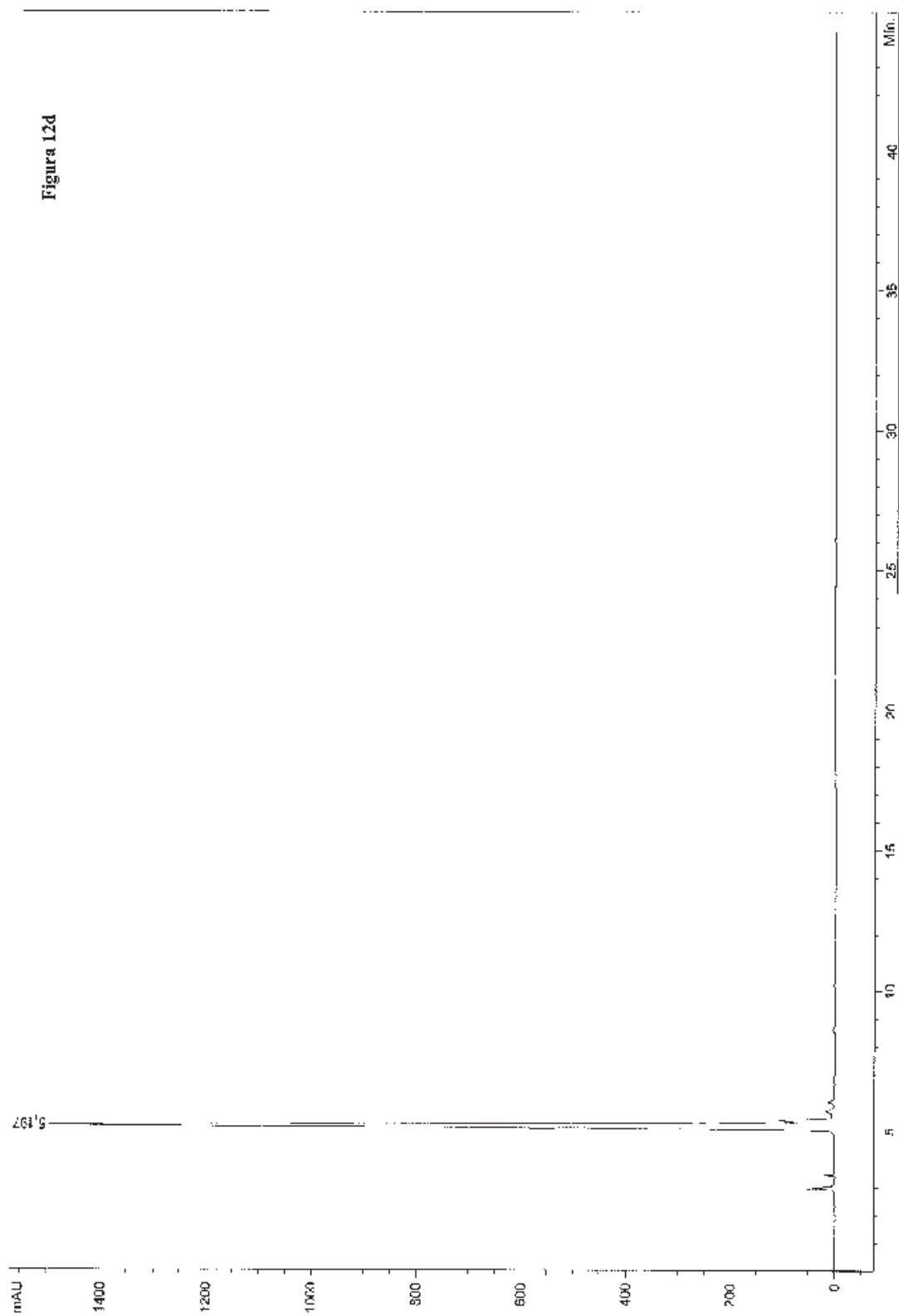


Figura 12a







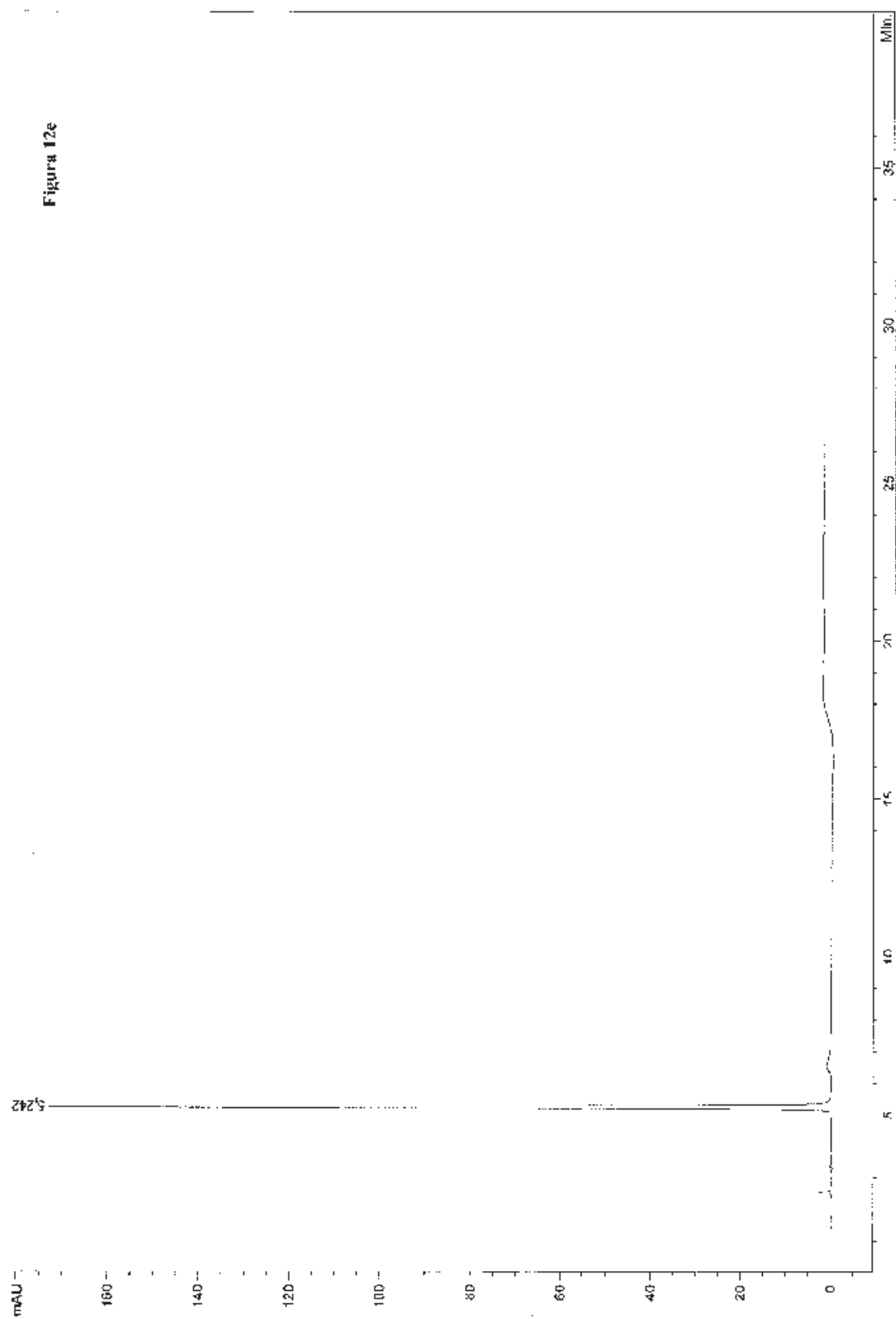
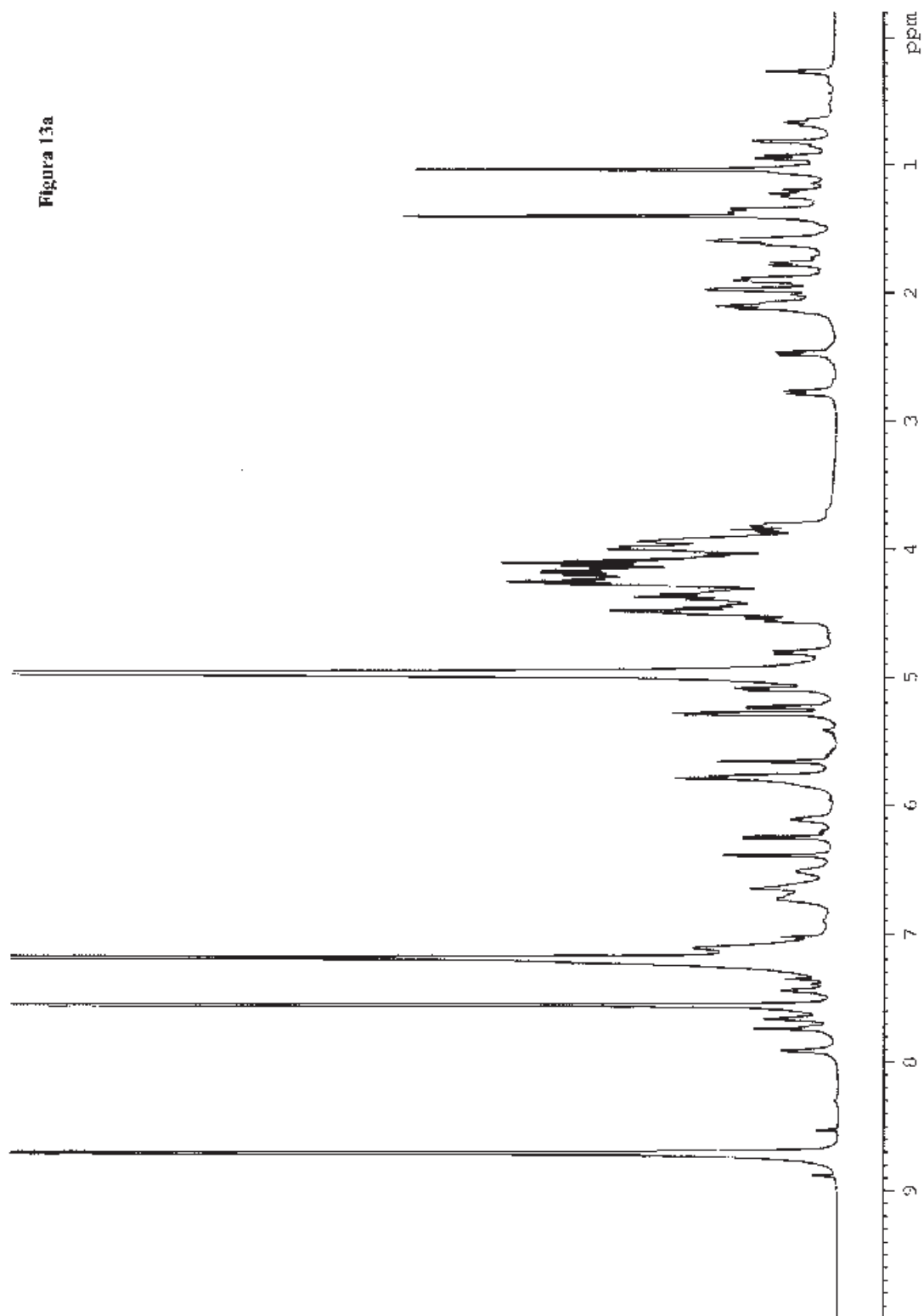
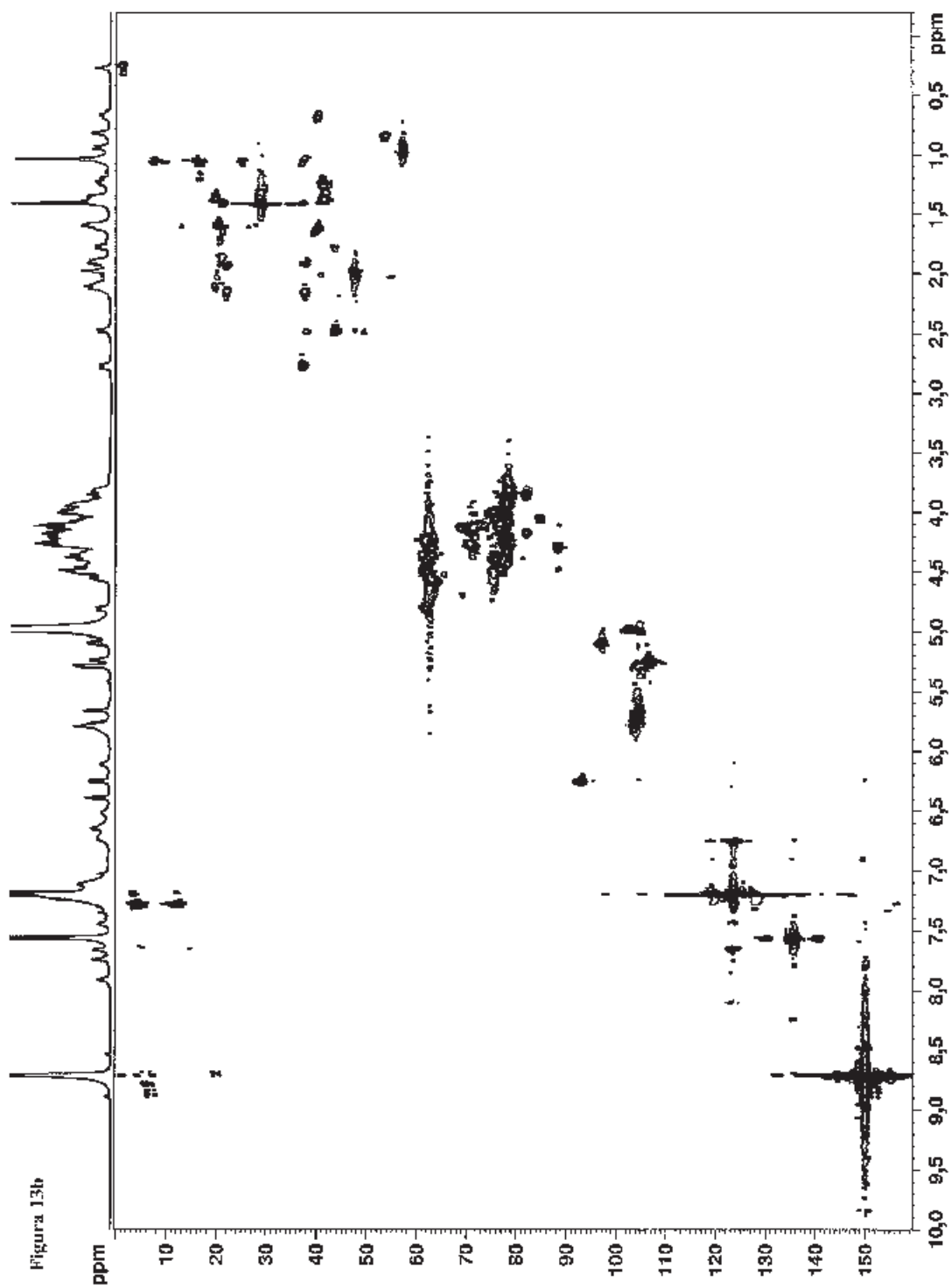
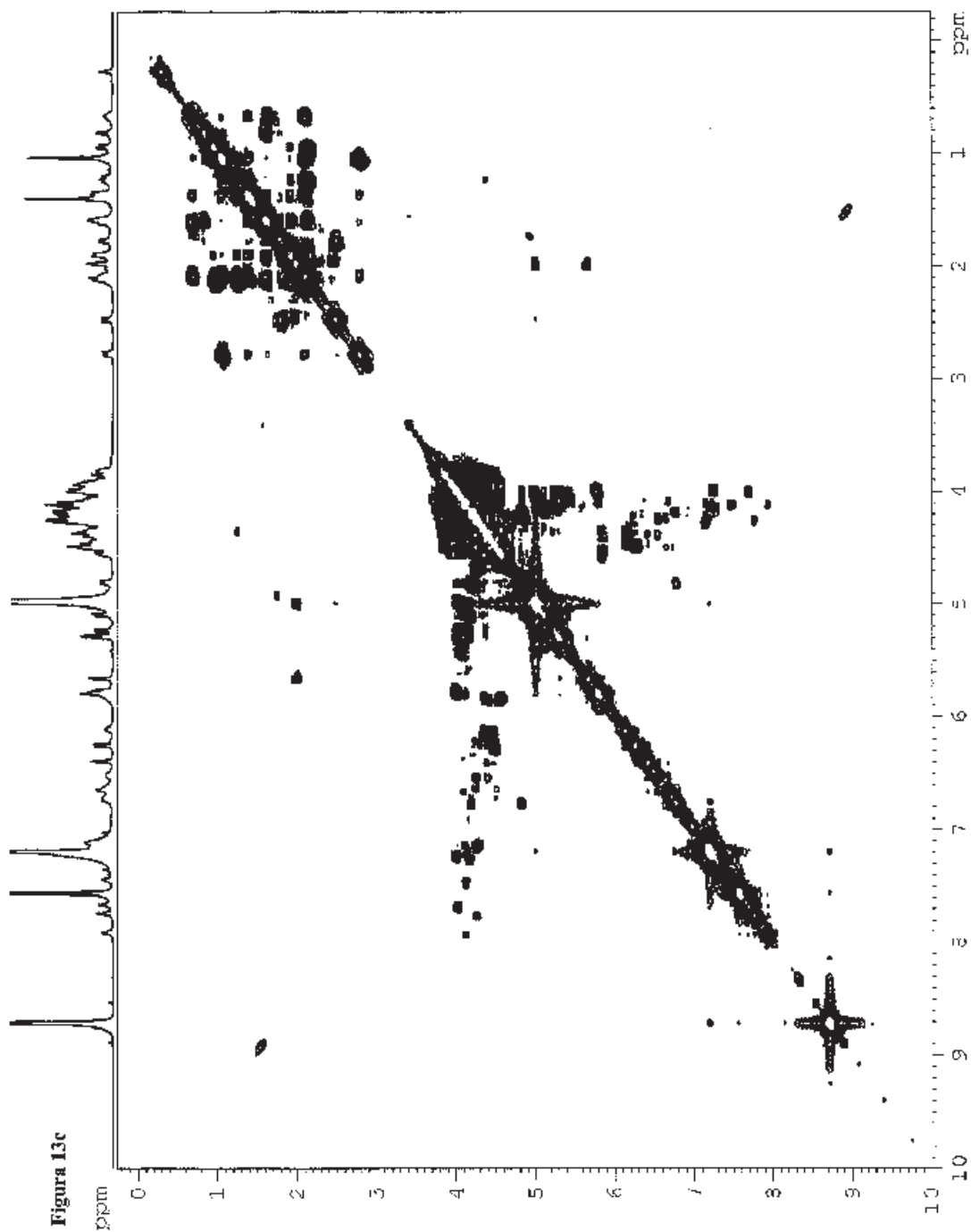
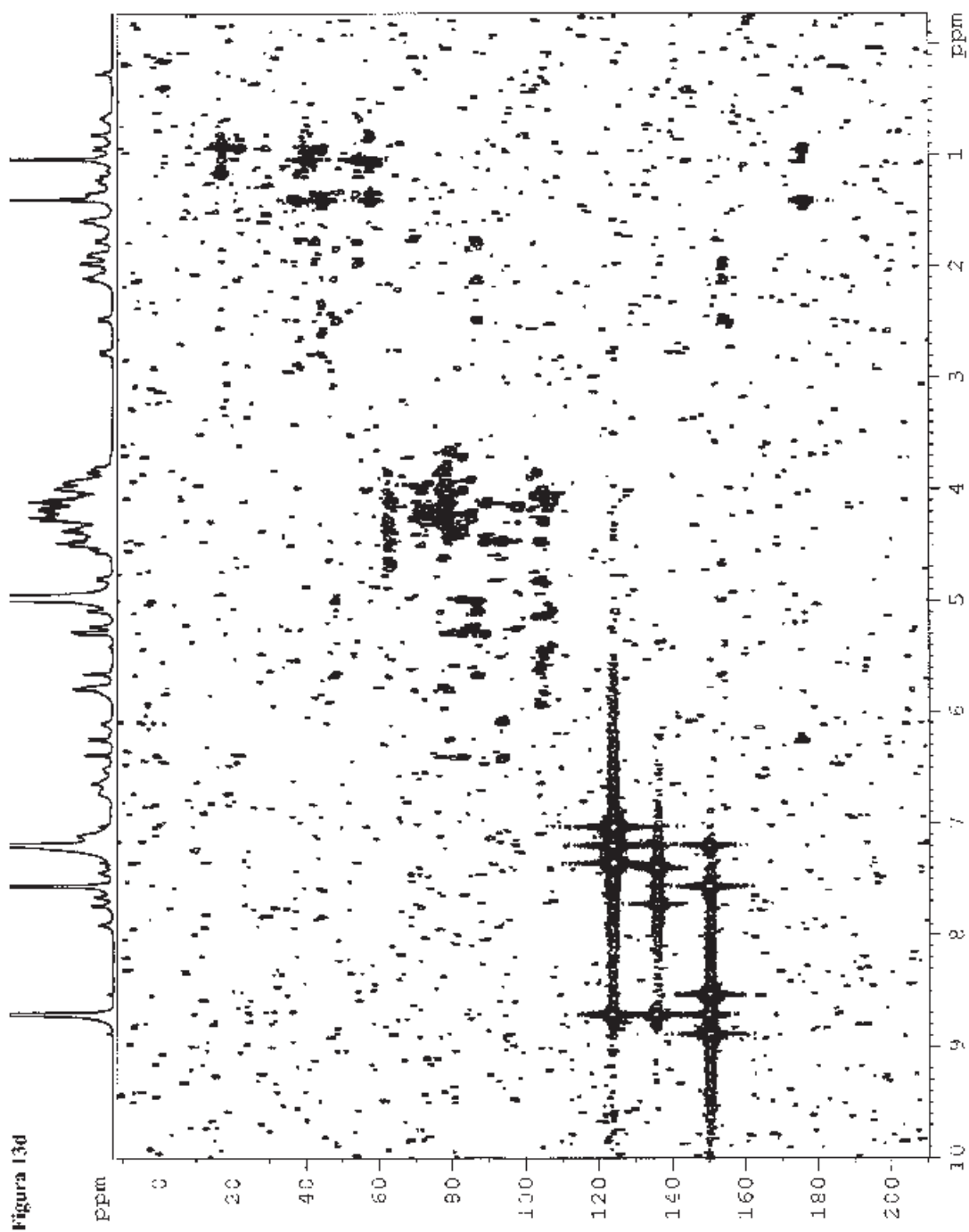


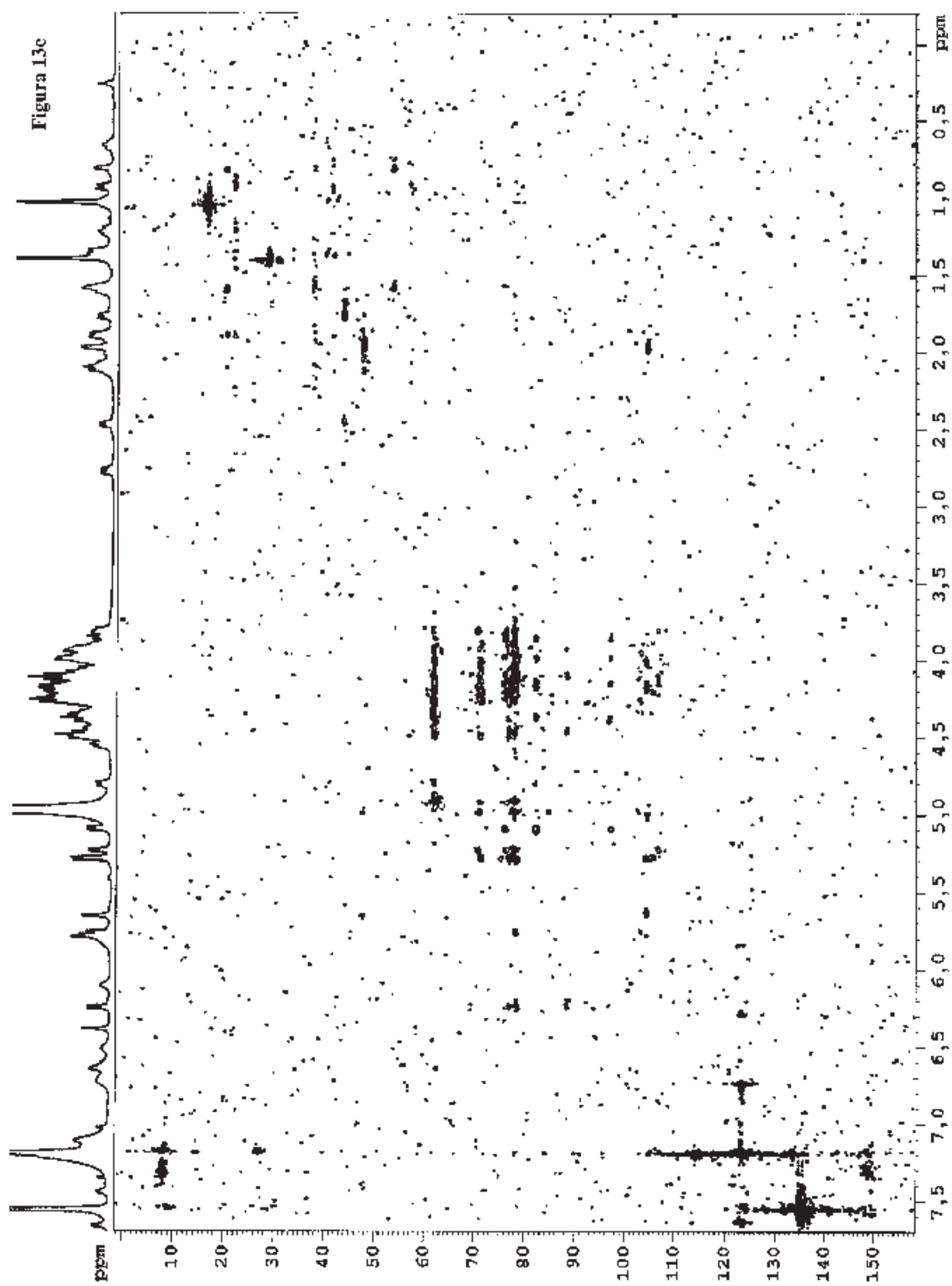
Figura 13a











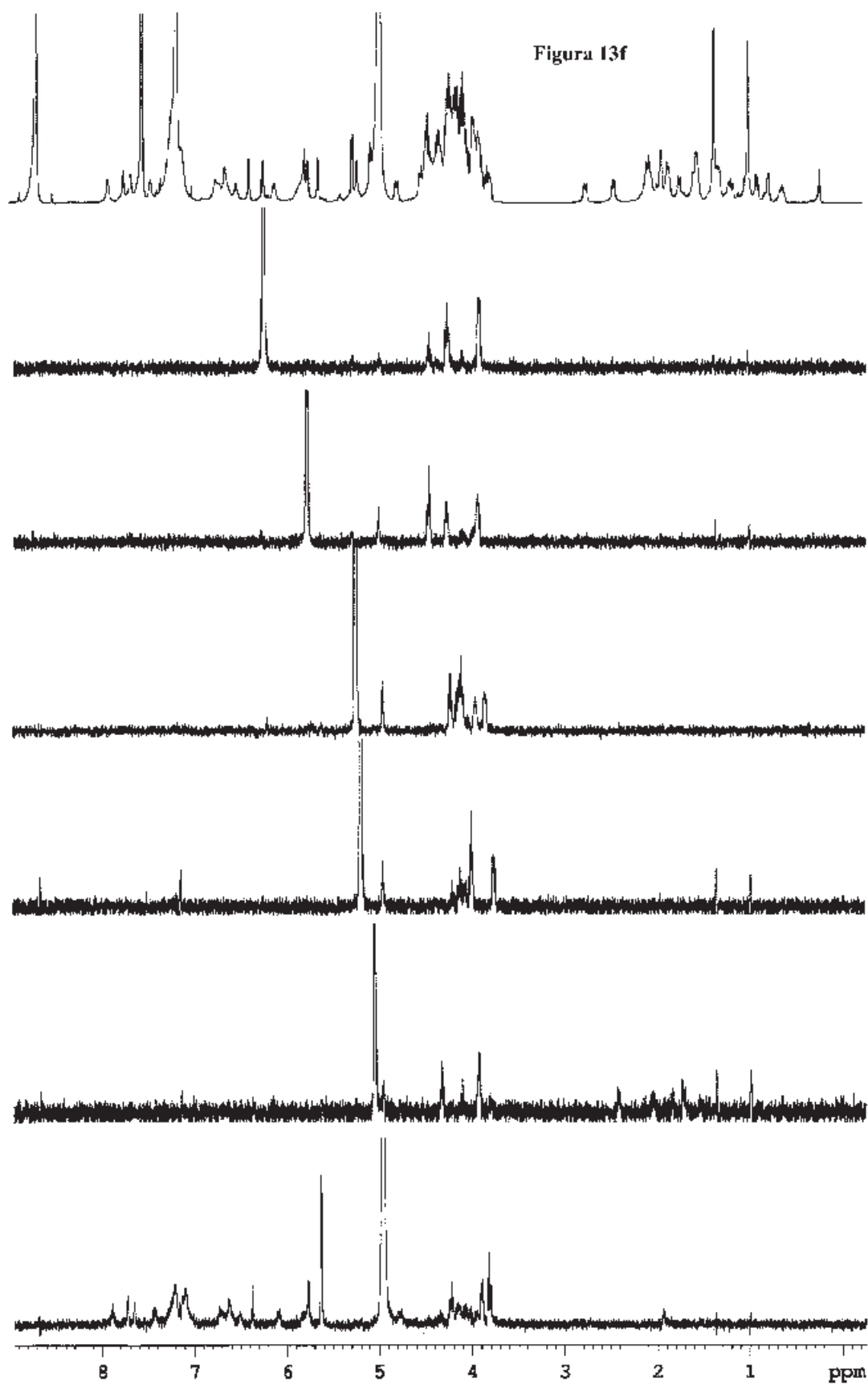
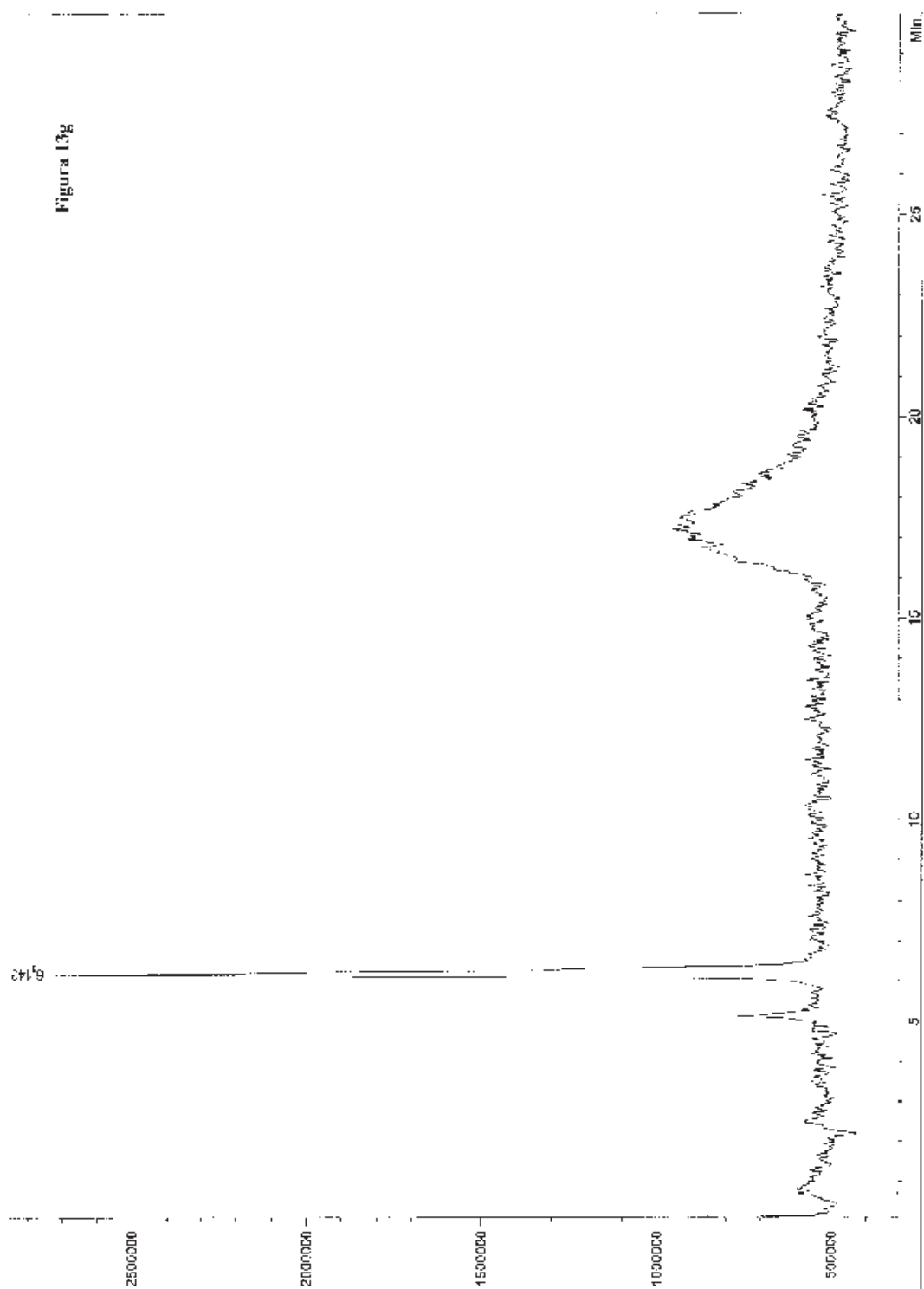
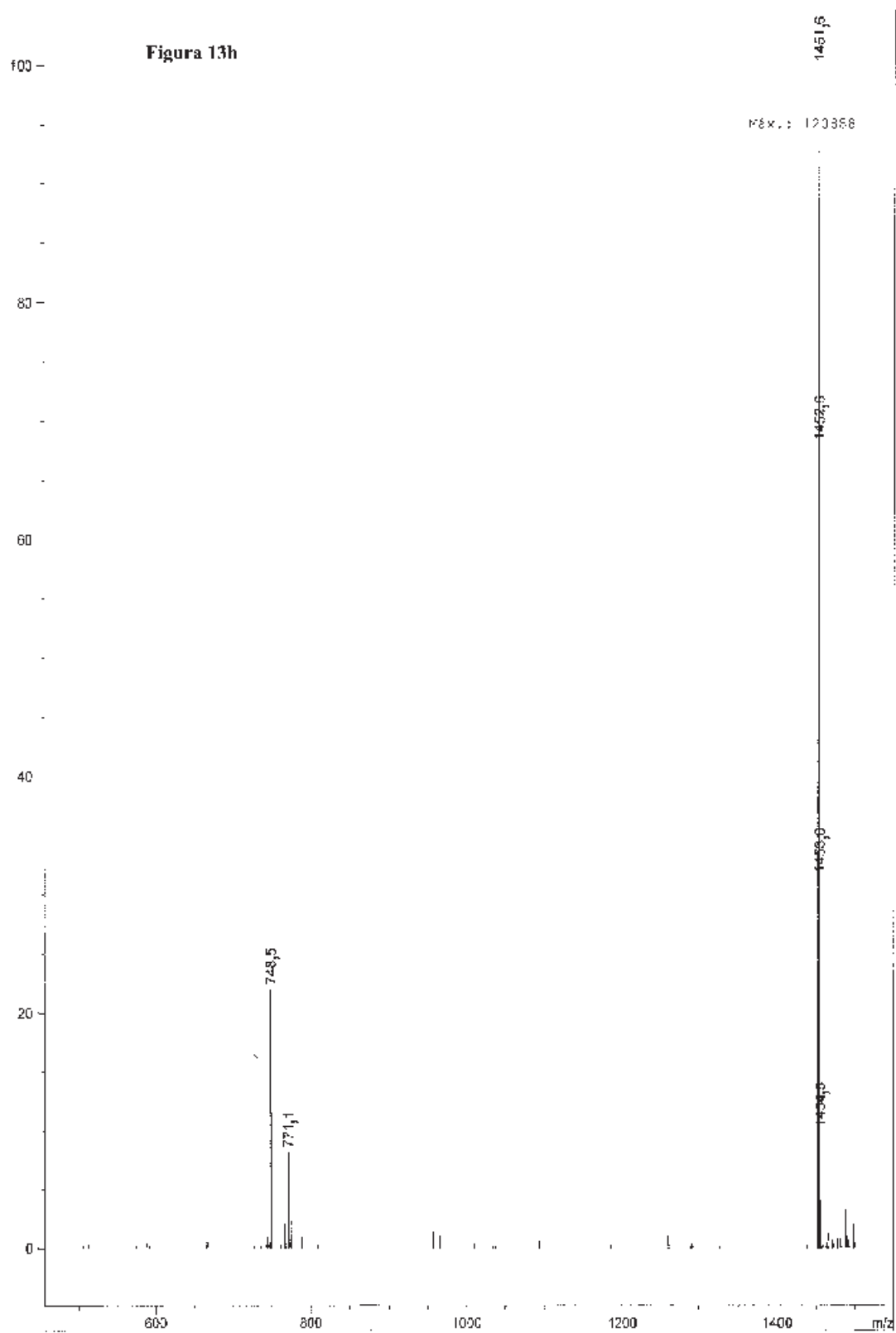
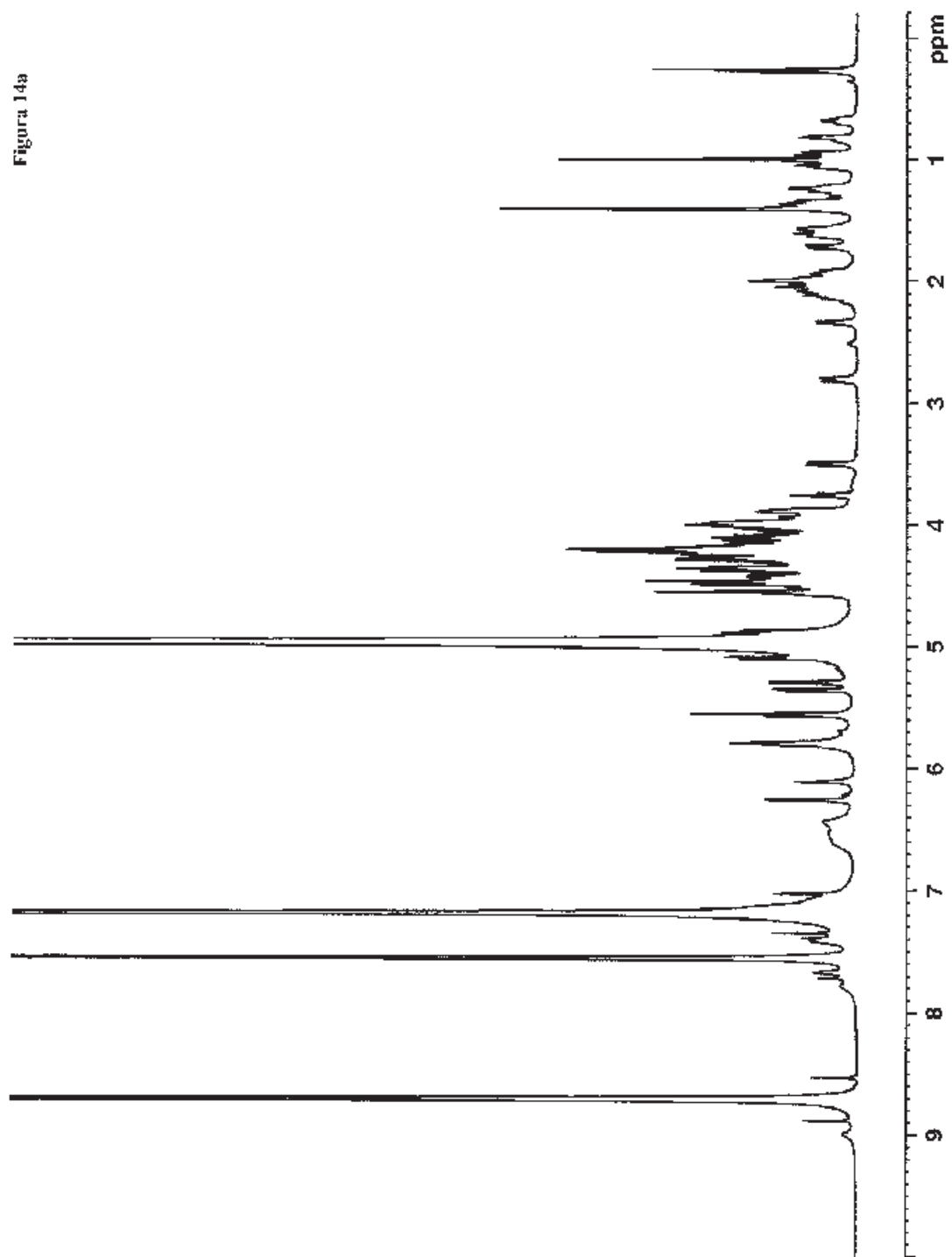
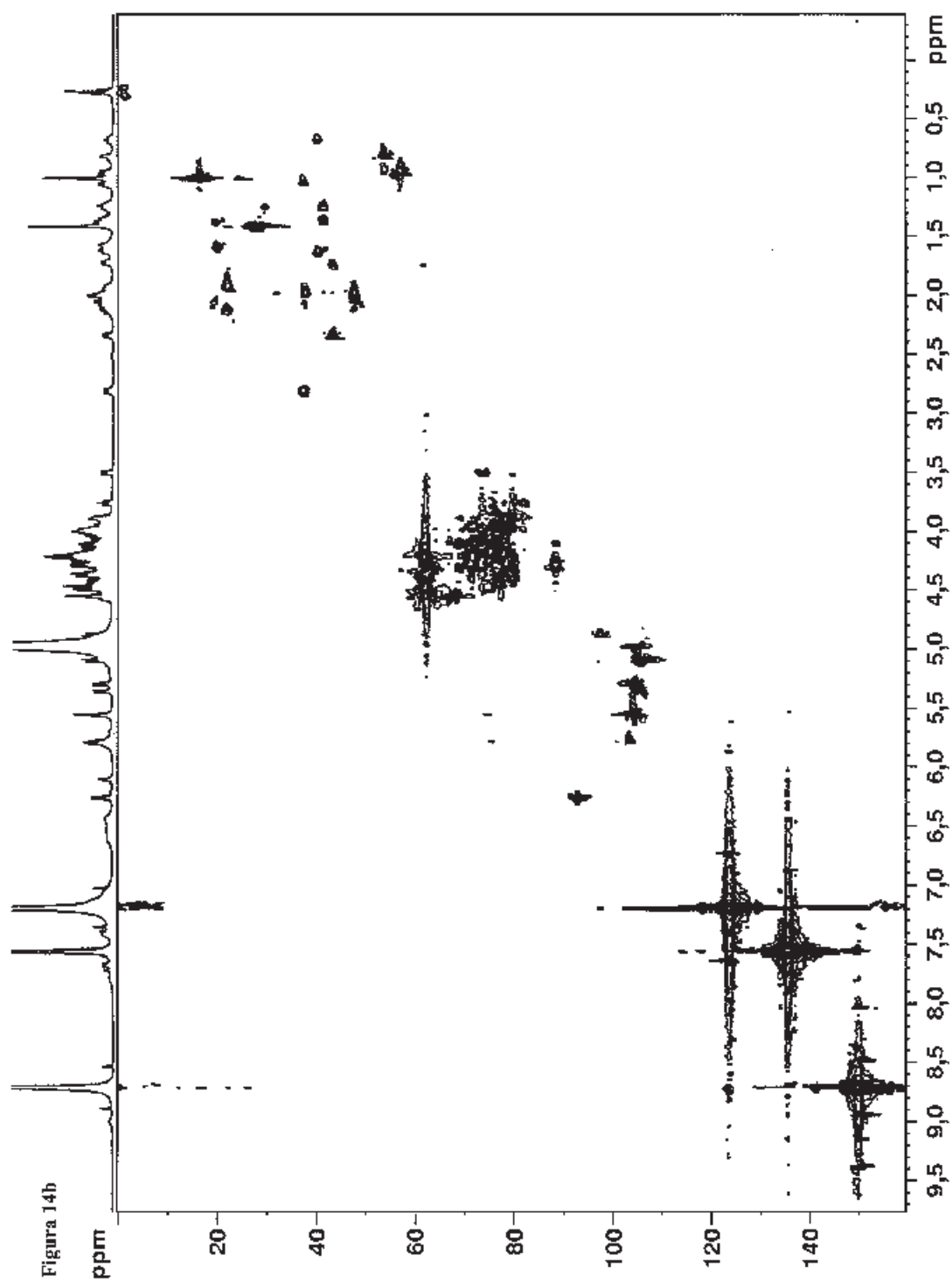


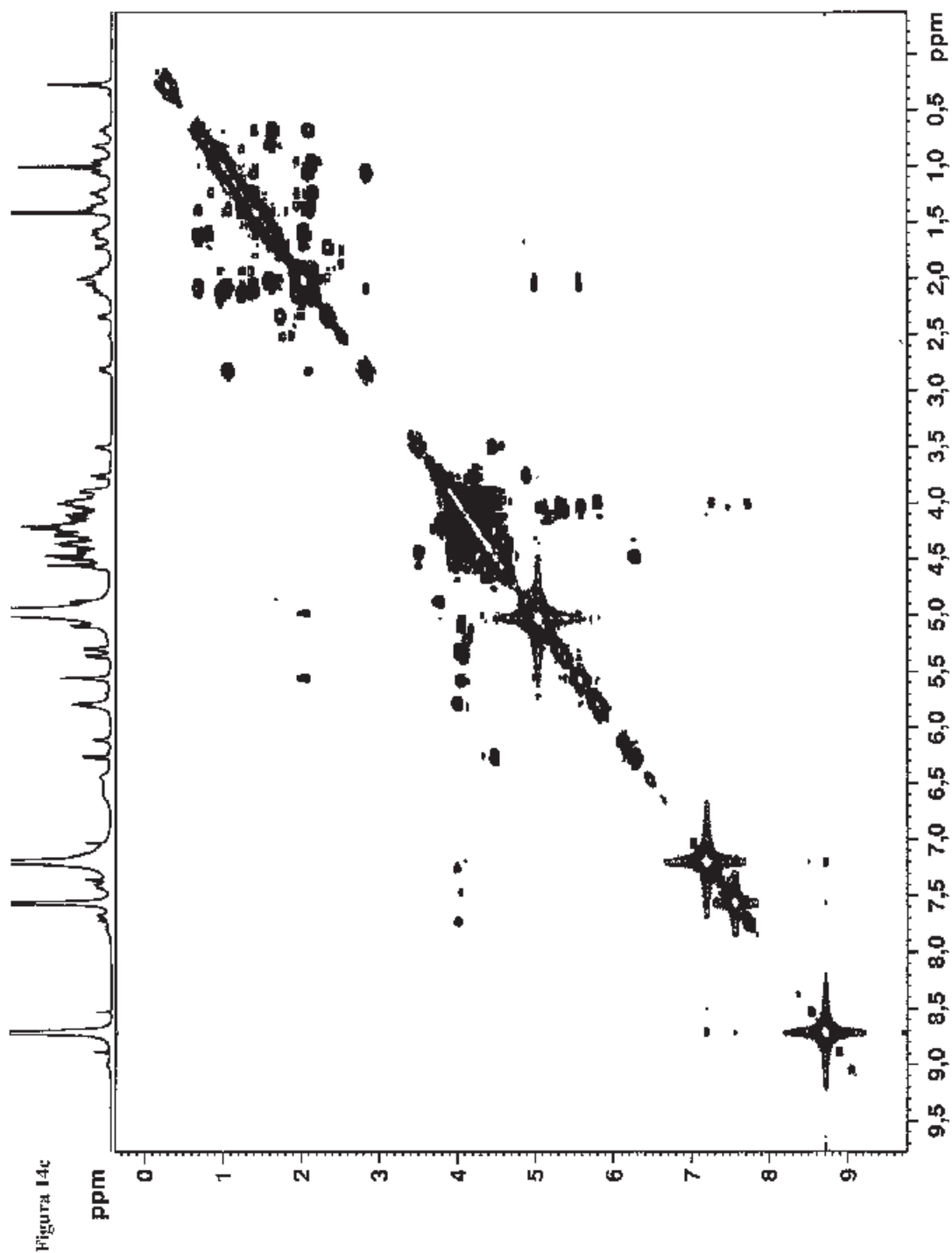
Figura 13g

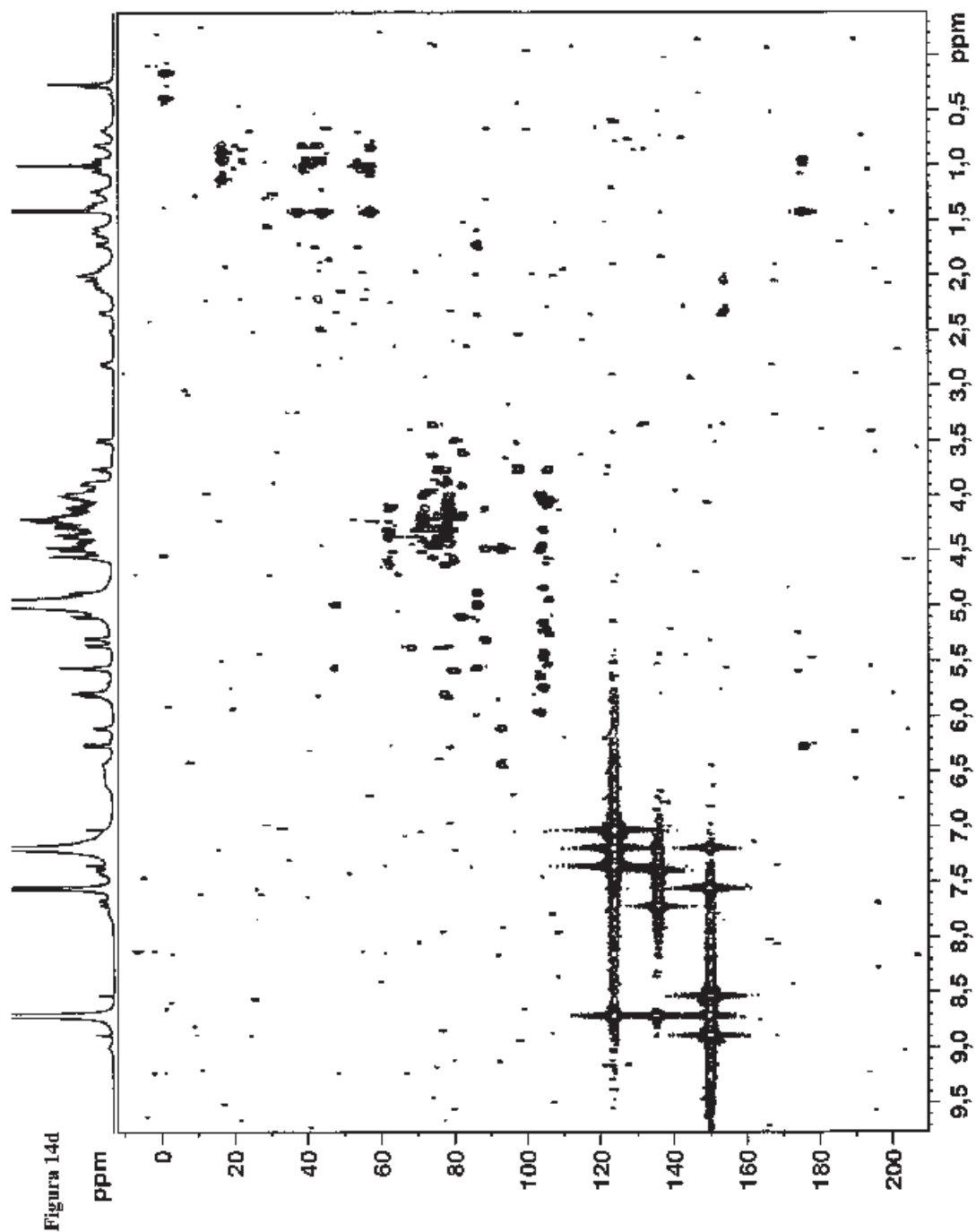


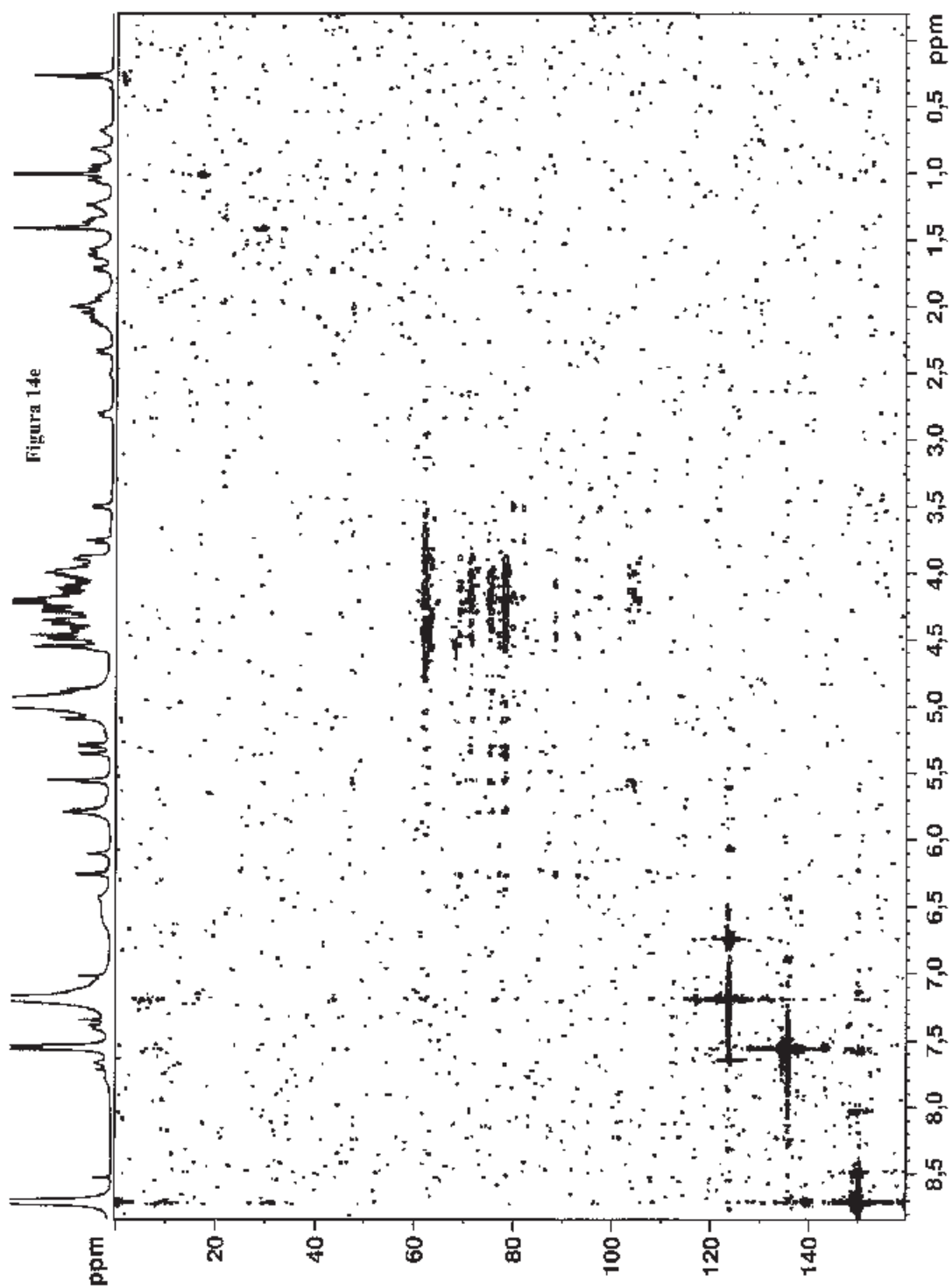


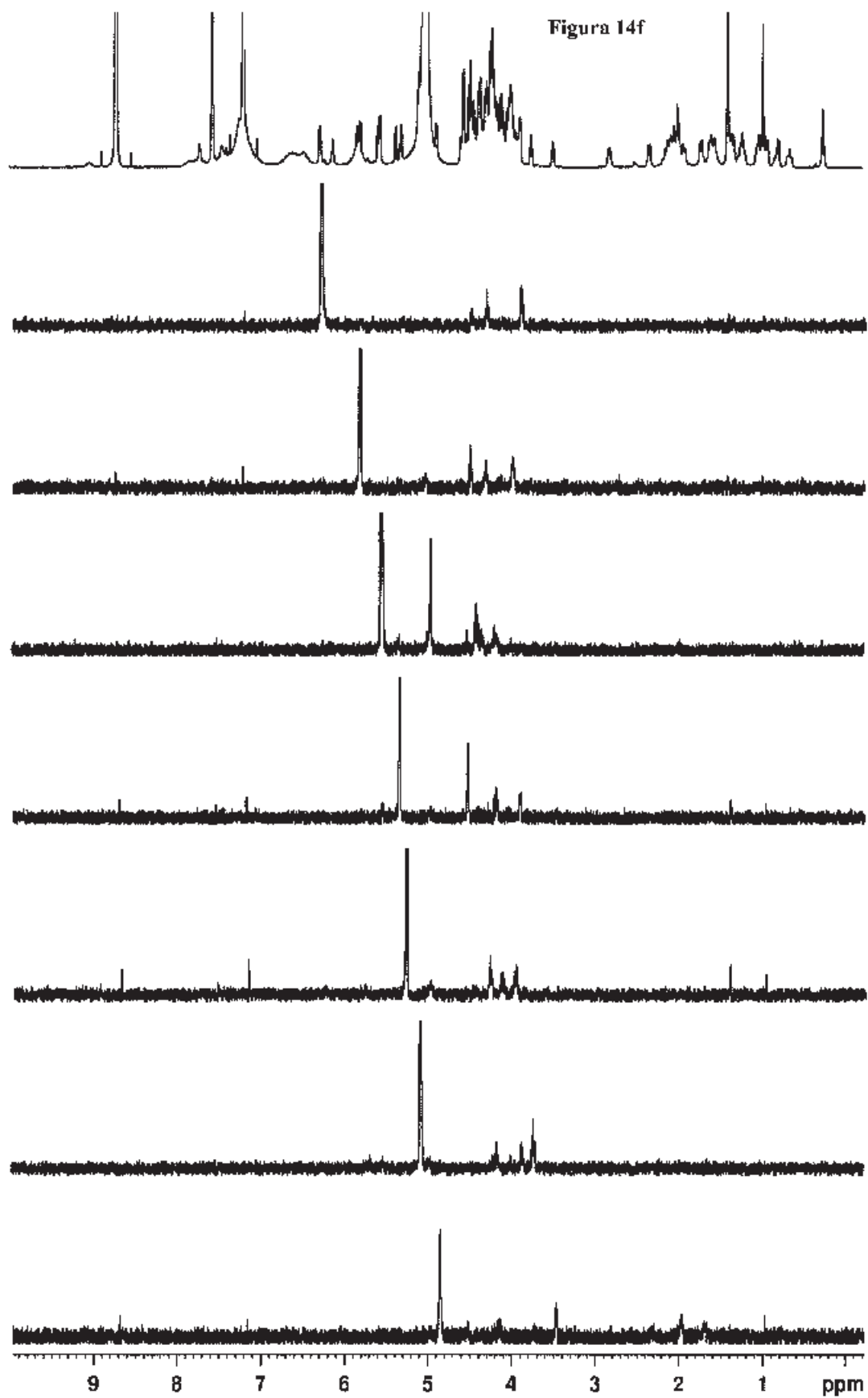












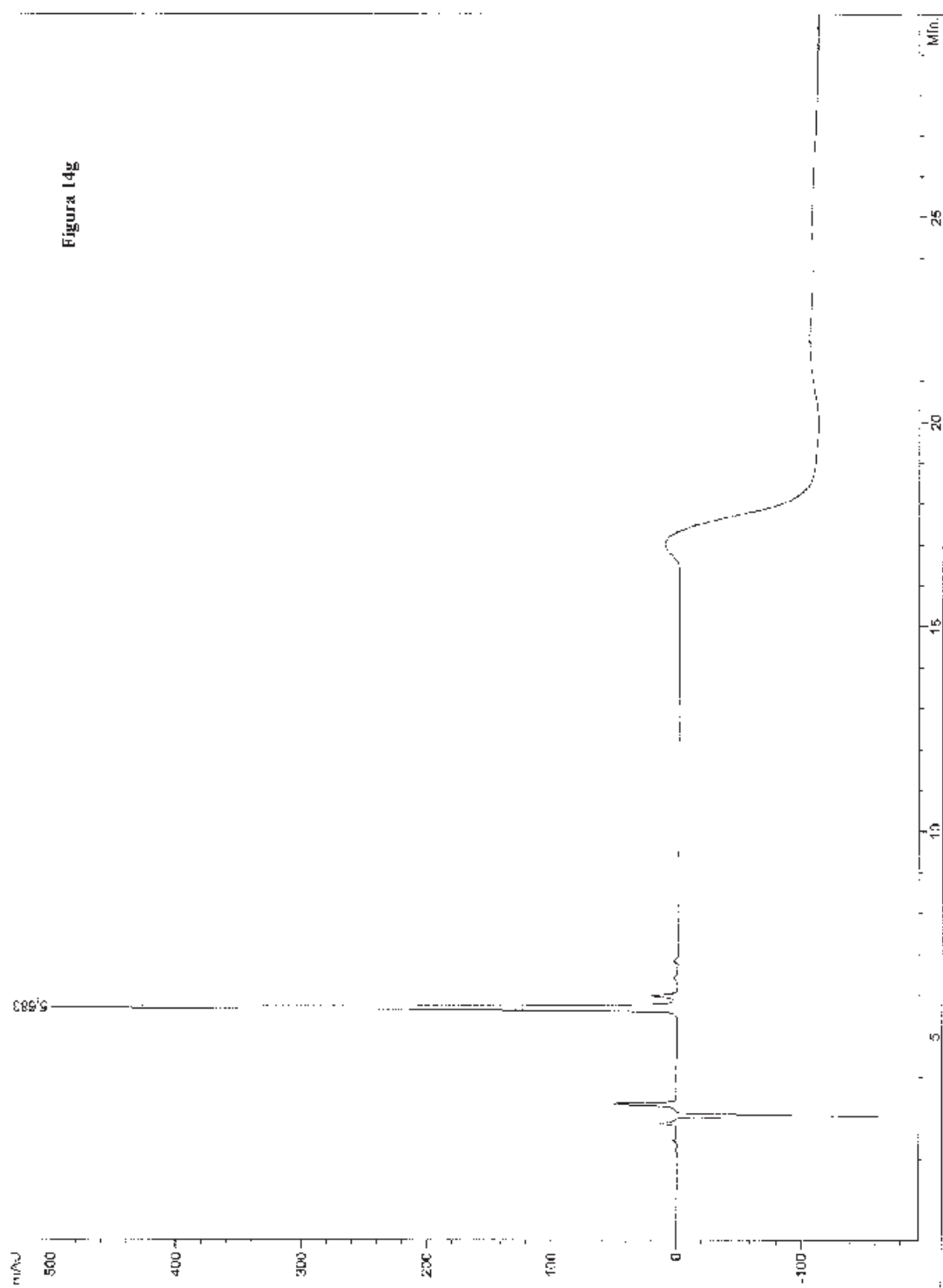


Figura 14g

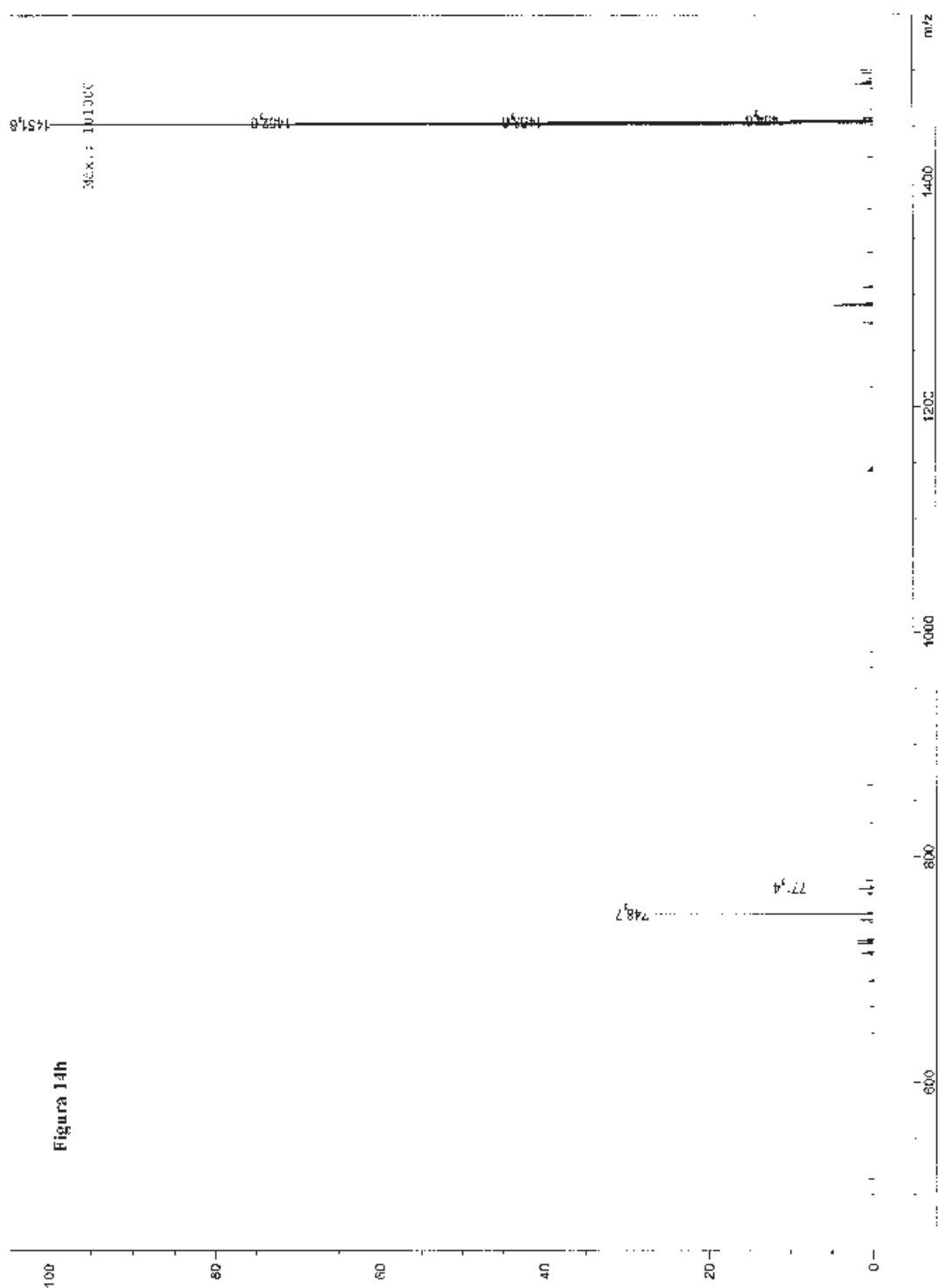
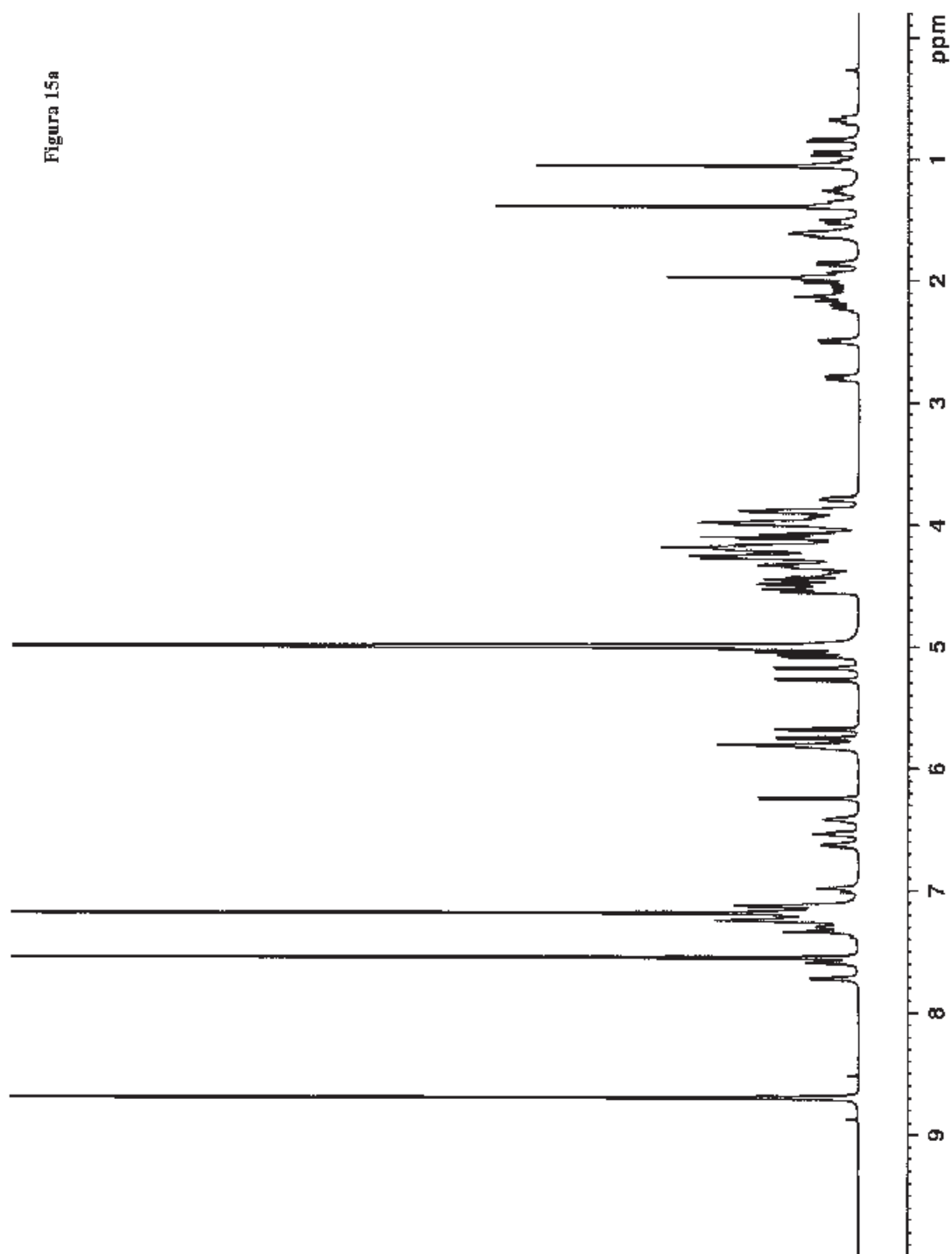
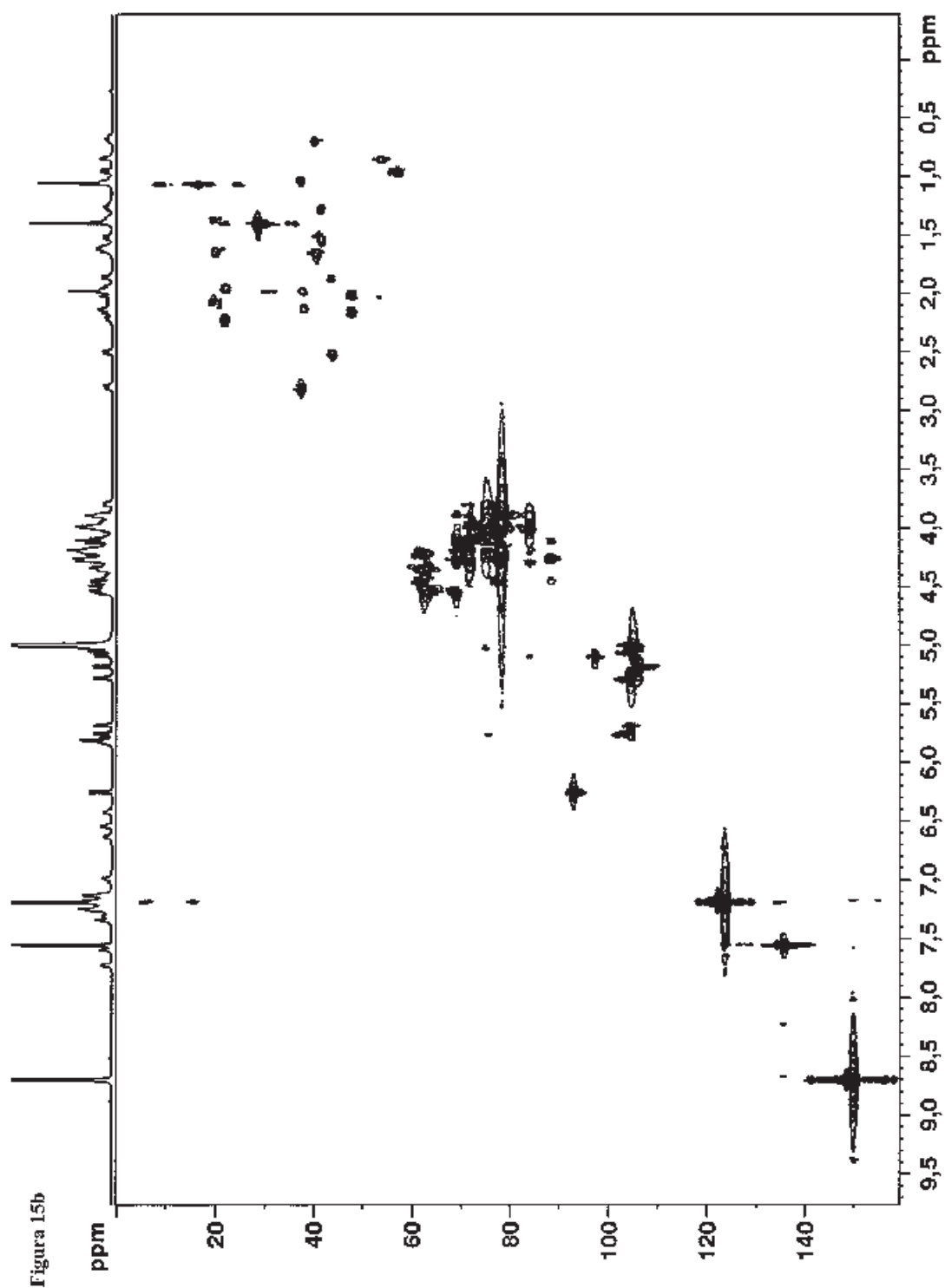
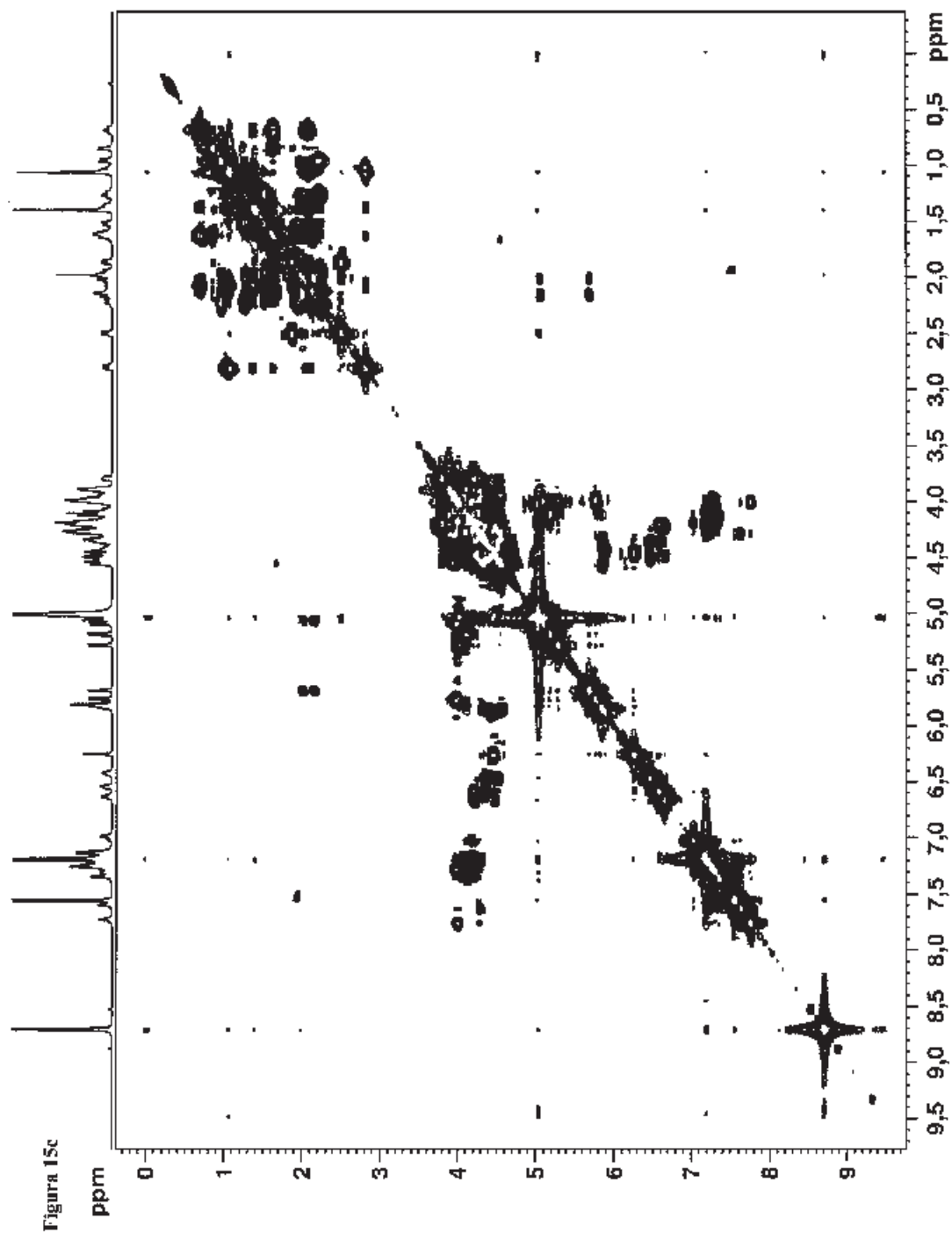
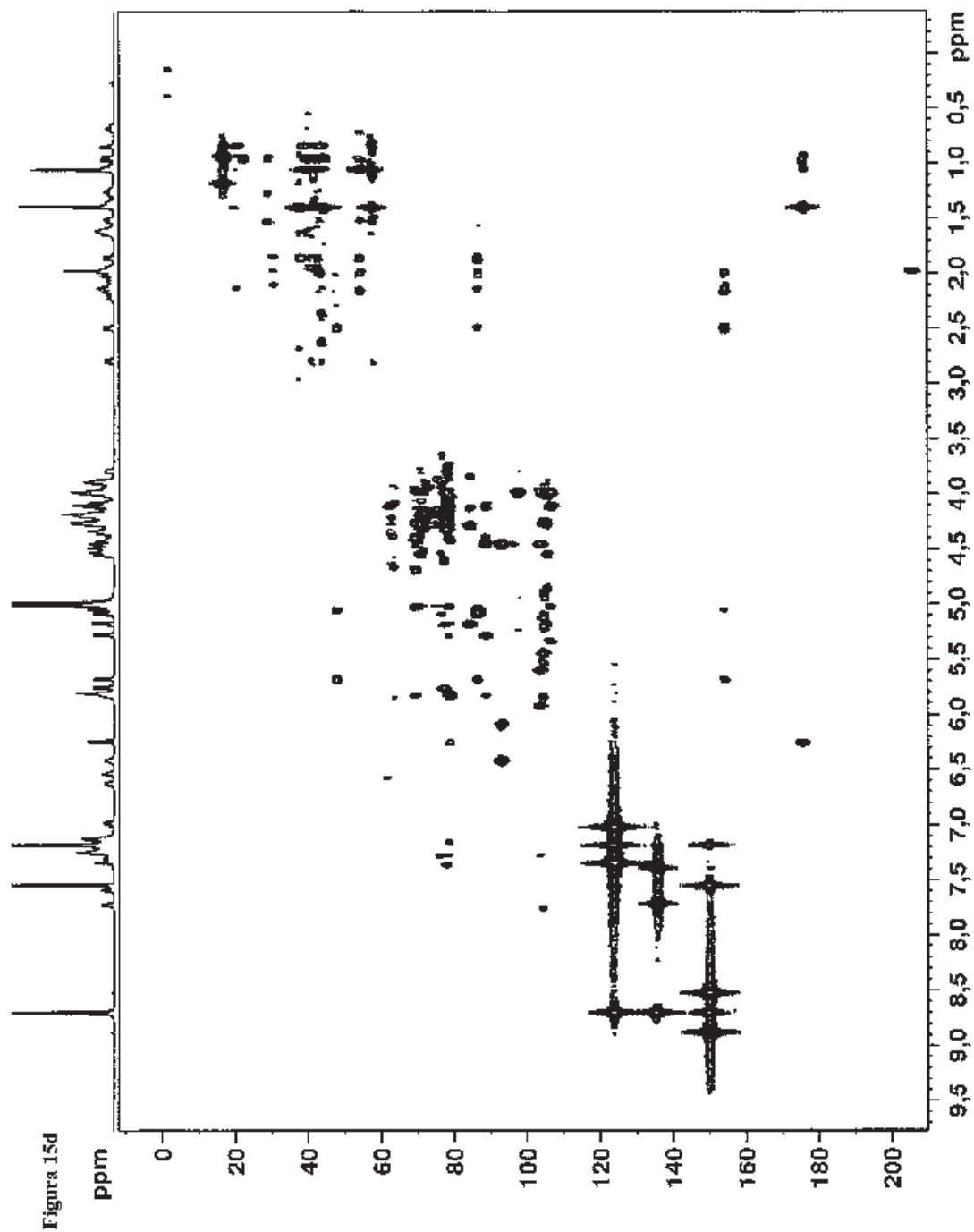


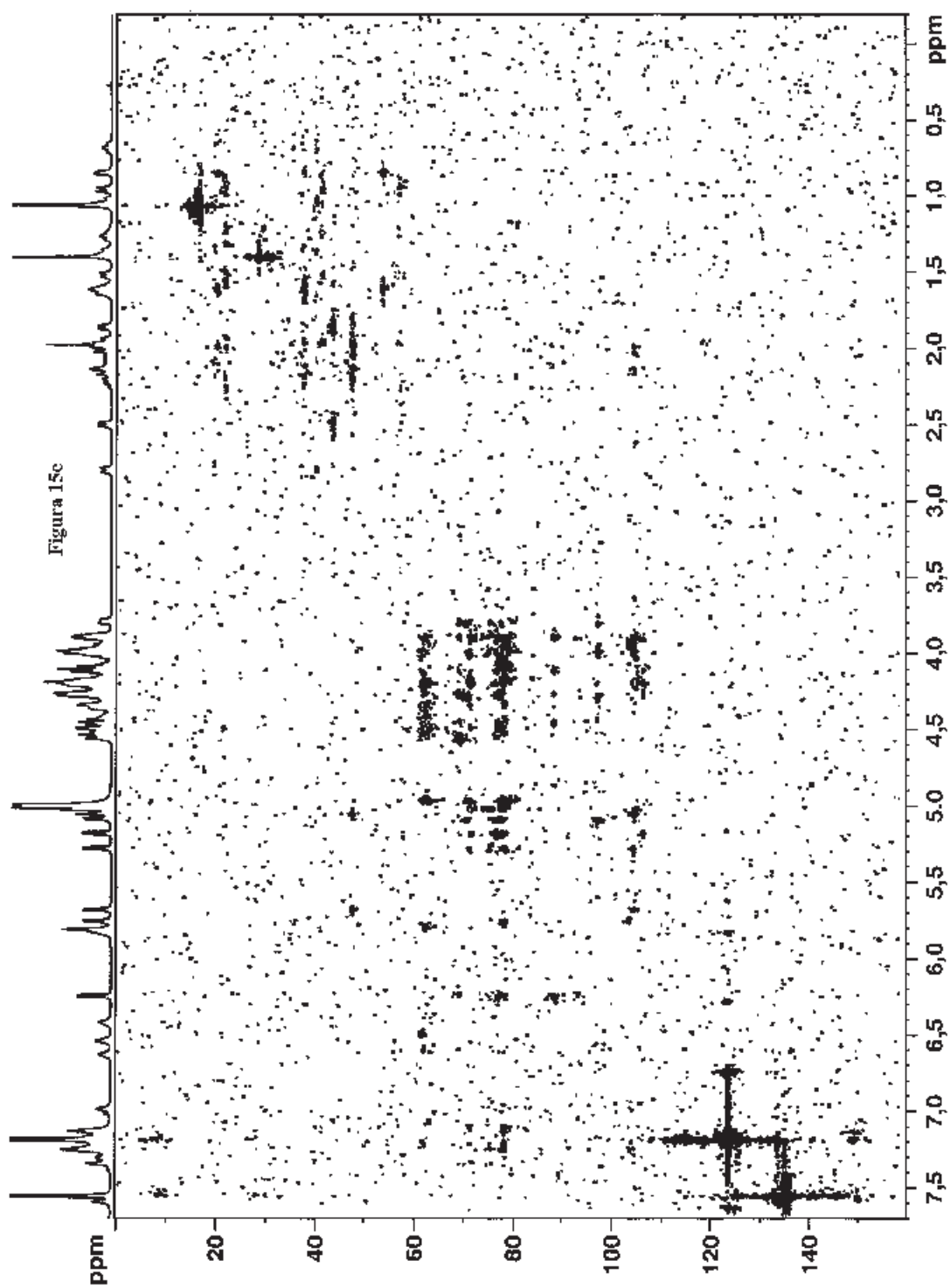
Figura 15a

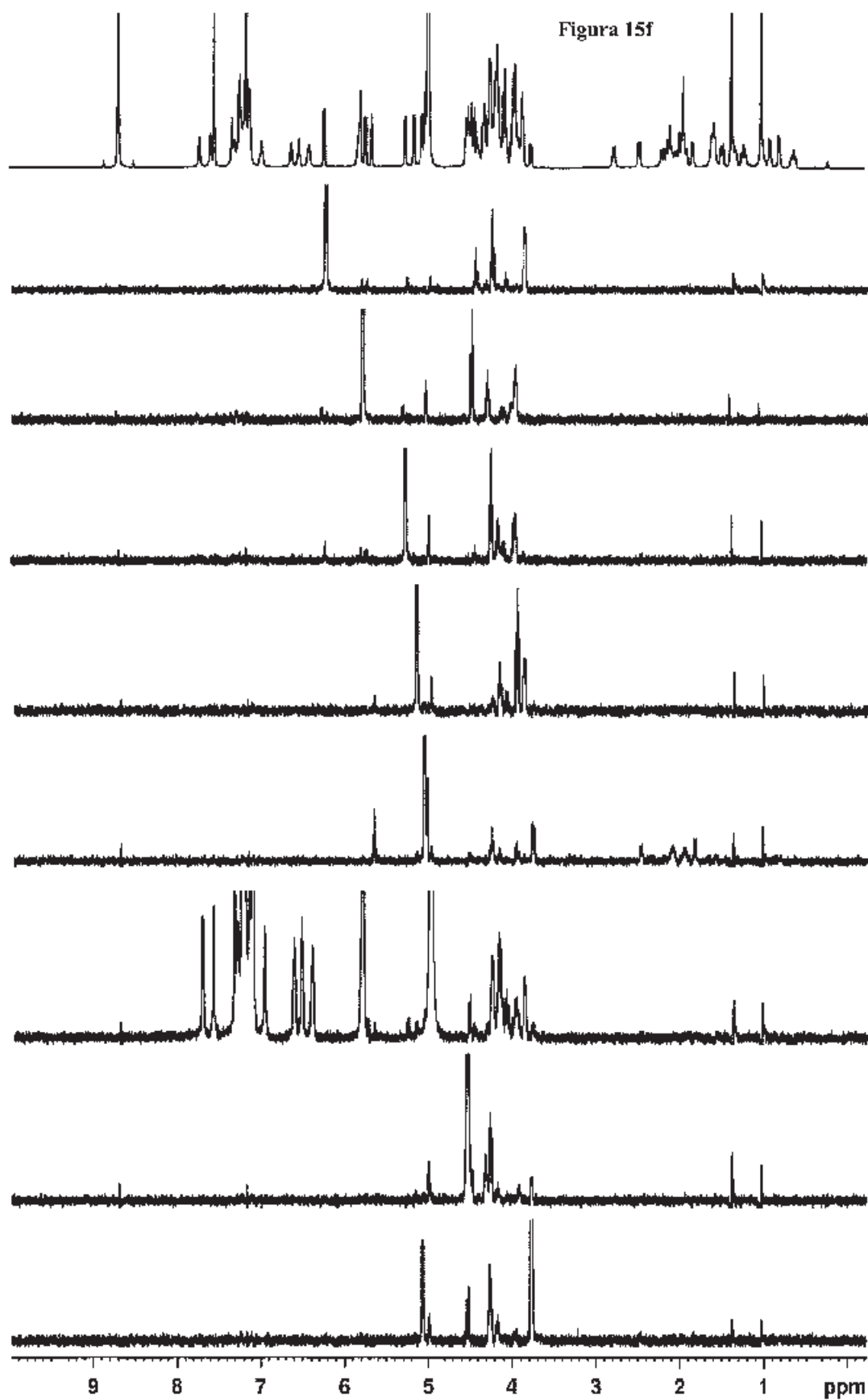












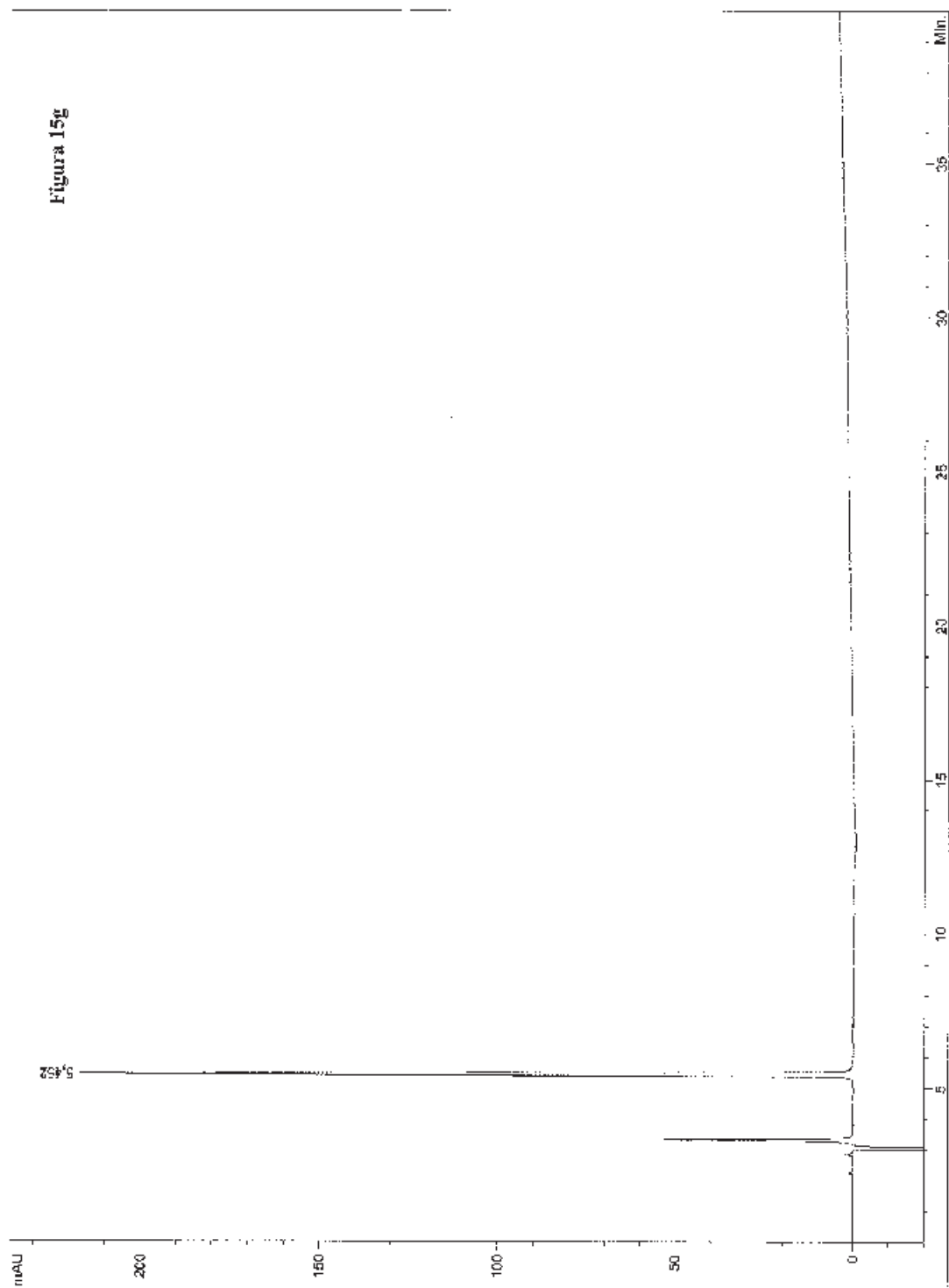


Figura 15g

