

FIG. 1

FIG 2A

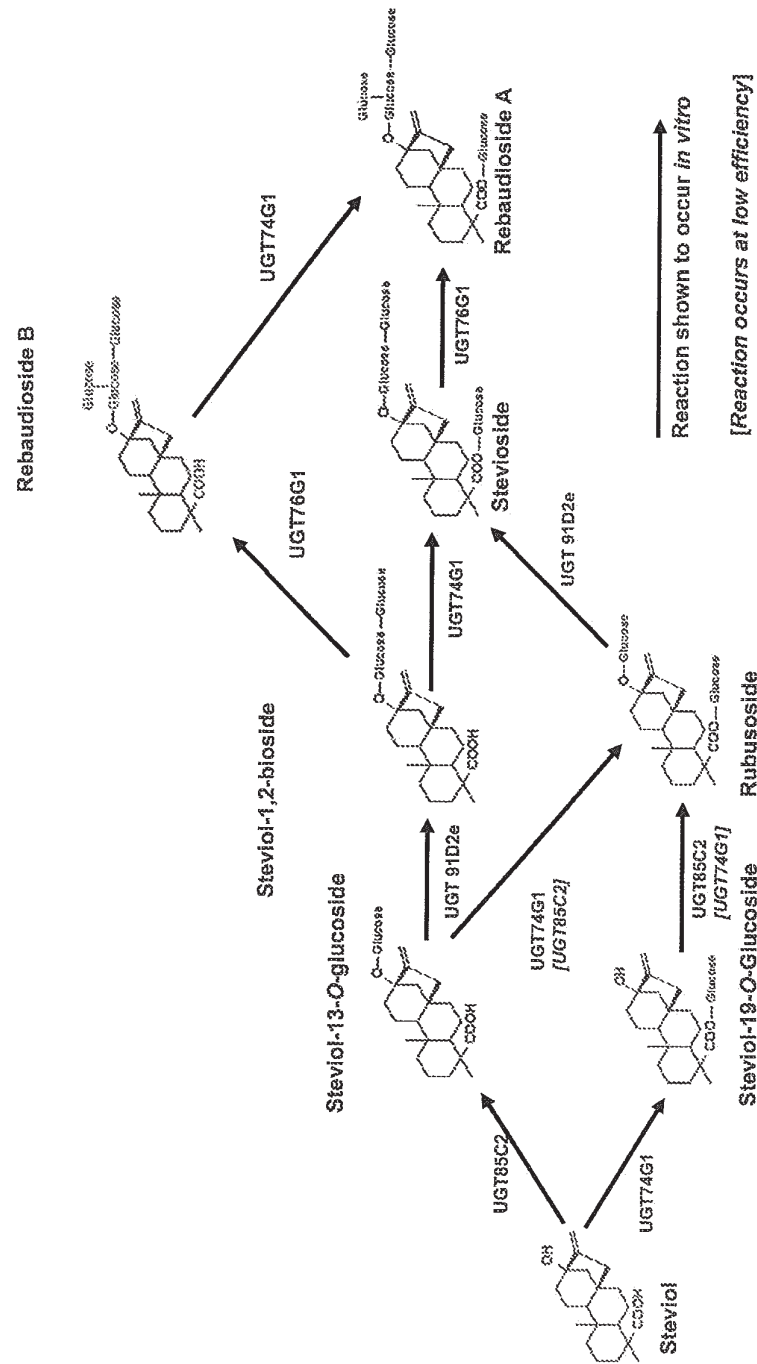
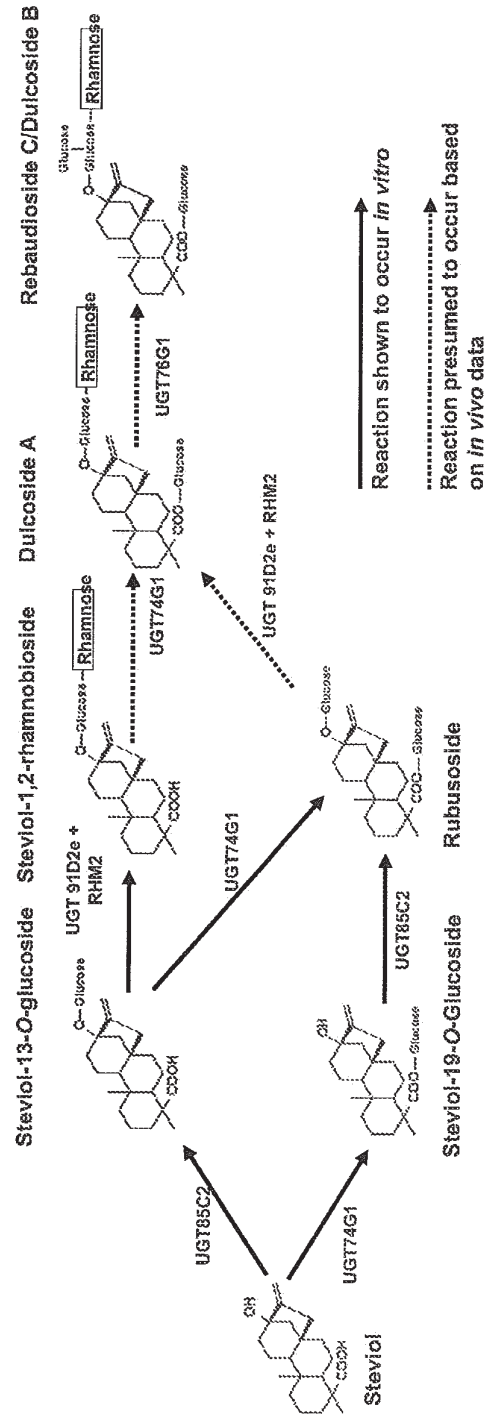


FIG 2B



2025

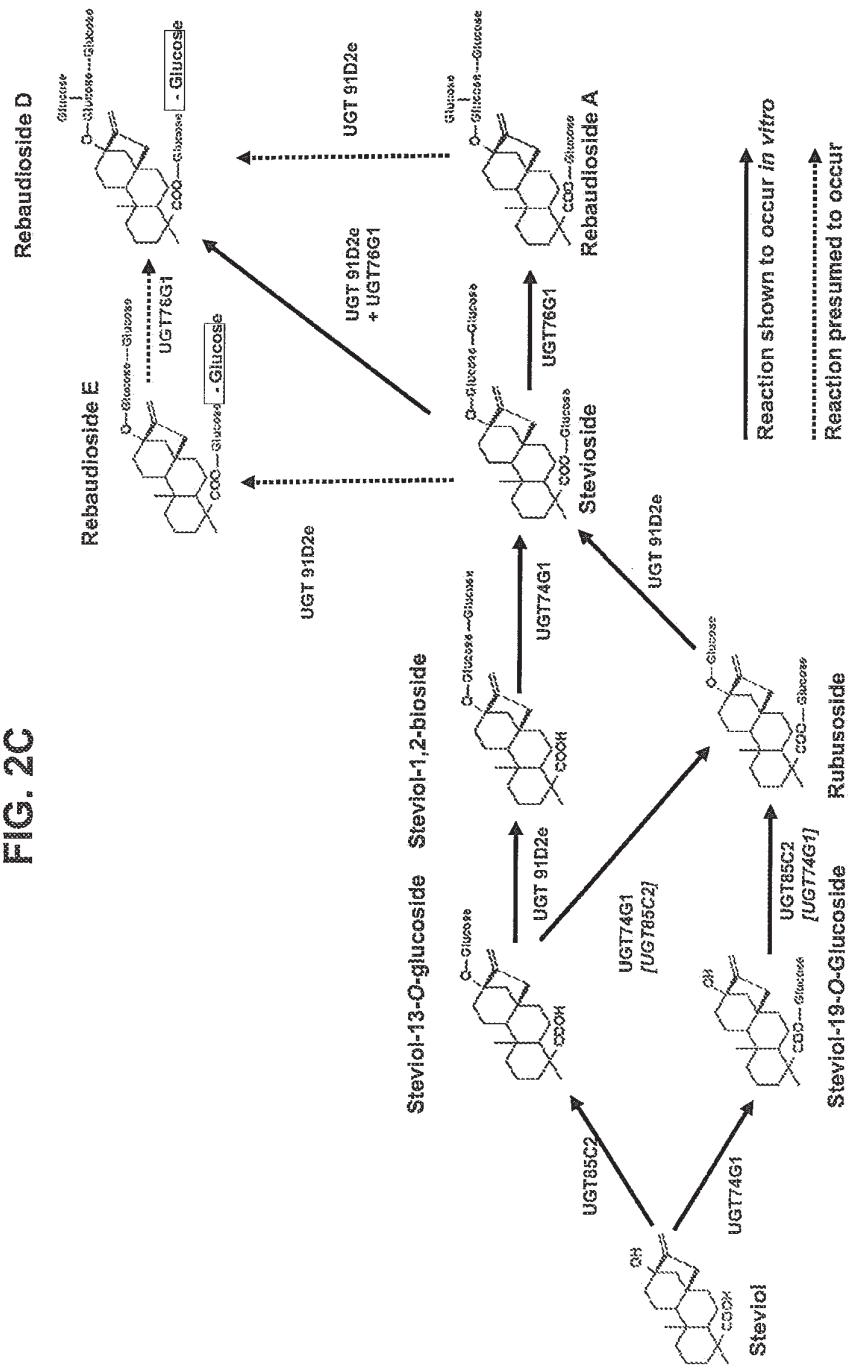
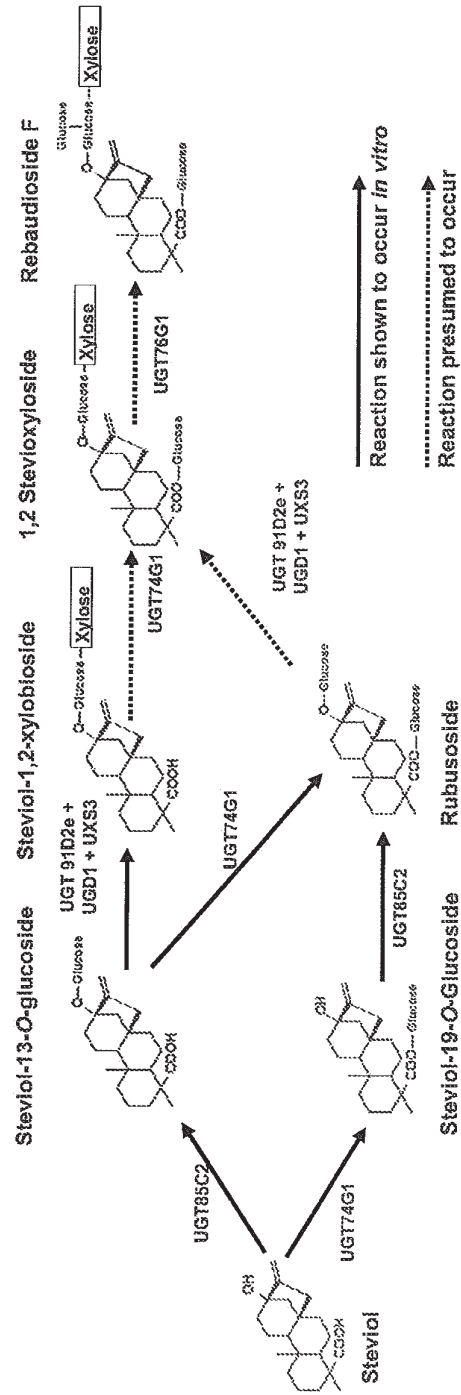


FIG. 2D



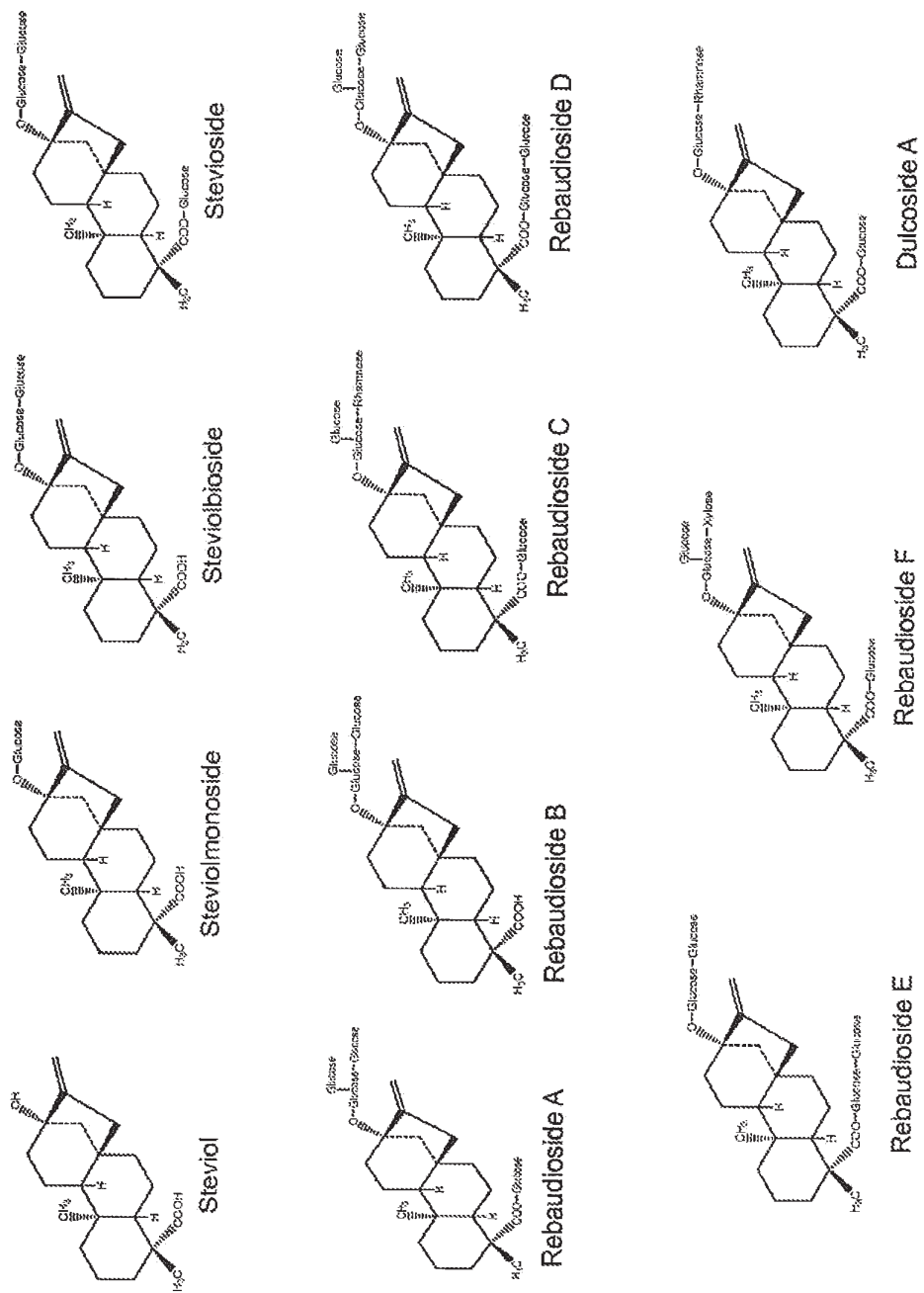


FIG. 3

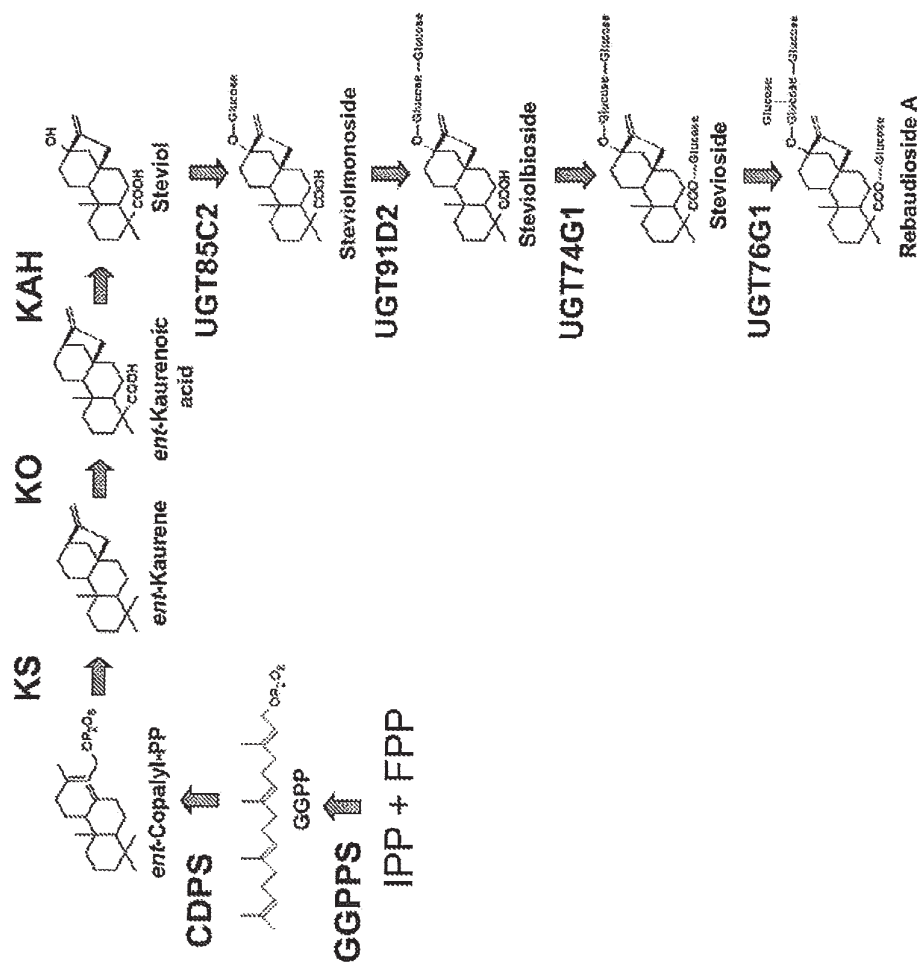
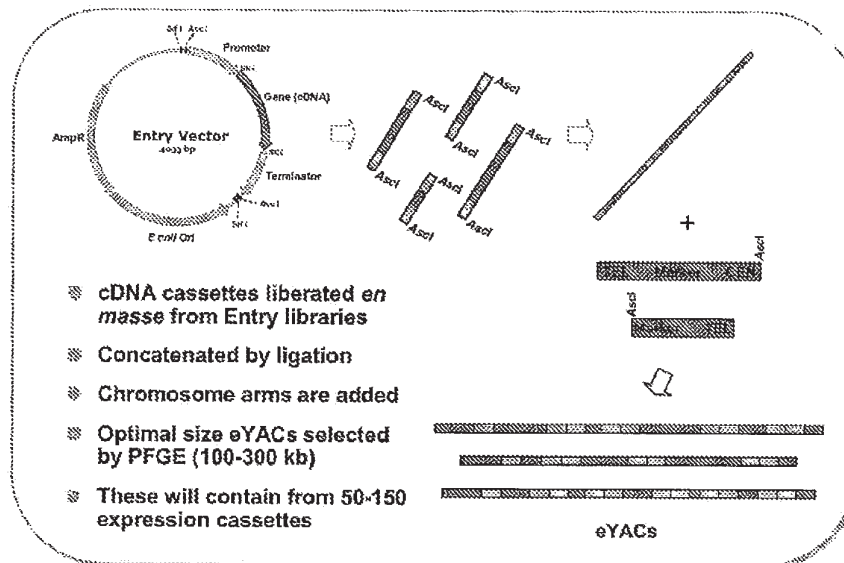


FIG. 4

FIGURE 5



RUBUSOSIDE PRODUCTION UNDER VARIOUS CULTURE CONDITIONS

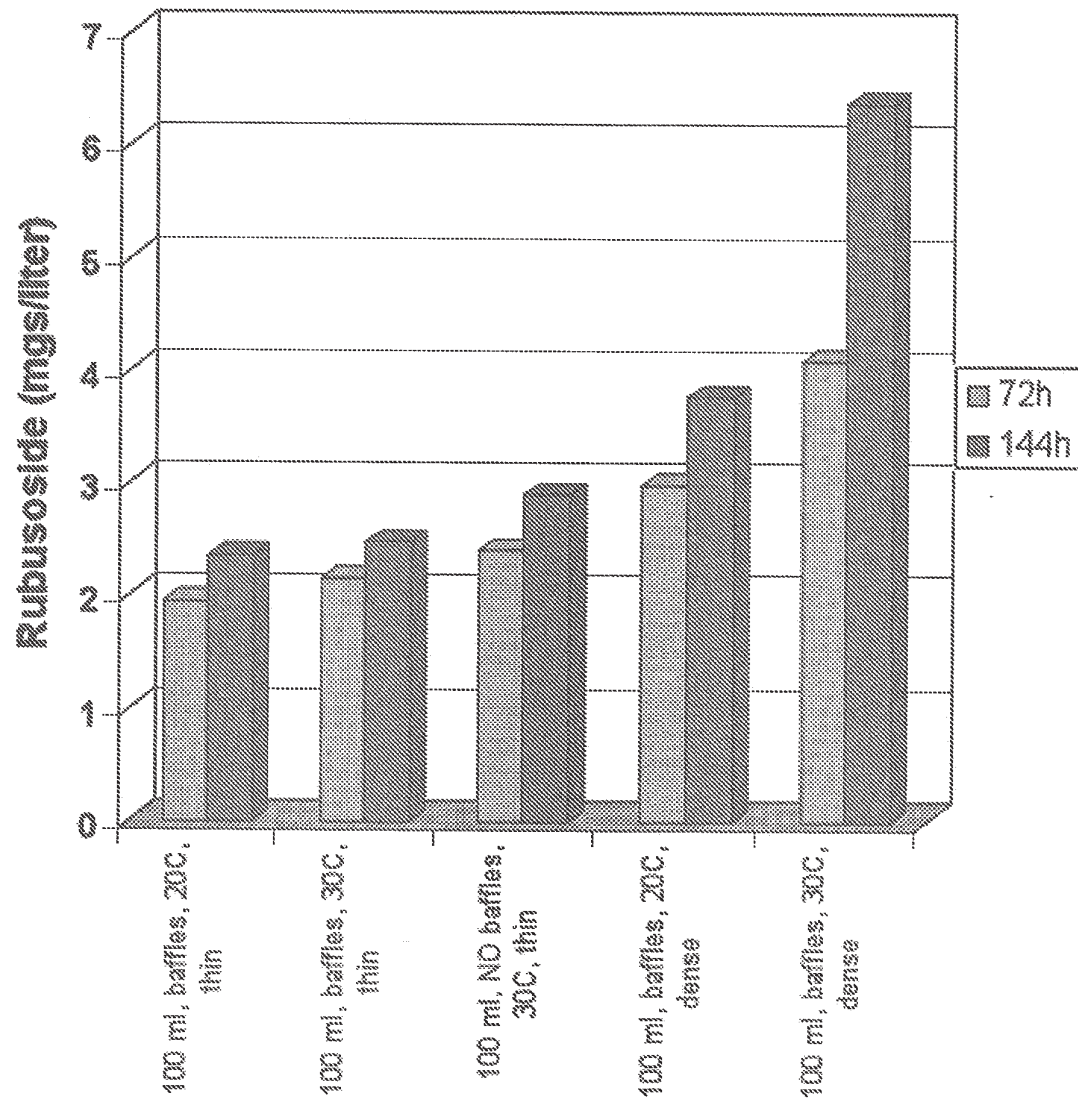
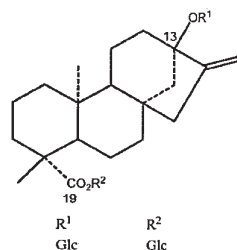


FIGURE 6

Rubusoside
NMR-Data in d5-Pyridine



No	Literature			Analyte		
	1H		13C	1H		HSQC
	δ [ppm]	M J[Hz]		δ [ppm]	M J[Hz]	
1			40.8			40.7
2			19.4			19.4
3			38.3			38.0
4			44.0			-
5			57.3			57.1
6			22.1			22.0
7			41.1			41.5
8			42.4			-
9			53.9			53.7
10			39.8			-
11			20.7			20.5
12			37.2			36.8
13			85.9			-
14			44.5			44.5
15			47.7			47.6
16			154.5			-
17	4.99 5.33	br s br s	104.4	4.99 5.46	br s br s	104.2
18	1.25	s	28.3	1.25	s	28.3
19			176.9			-
20	1.26	s	15.6	1.21	s	15.6
13-O-Glc						
1	5.13	d 7.7	99.7	5.00	d 8.4	99.0
2	4.07	dd 7.7/9.0	75.2			74.8
2	4.22	dd 9.0/8.9	78.8			78.2
4	4.32	dd 8.9/8.8	72.3			71.8
5	4.00	ddd 8.8/2.4/4.4	78.0			77.2
6	4.45 4.26	dd 2.4/12.0 dd 2.4/12.0	63.0	4.42	dd 2.3/12.5	62.6
19-O-Glc						
1	6.14	d 7.9	95.9	5.99	d 8.1	95.2
2	4.20	dd 7.9/9.0	74.0			73.5
2	4.22	dd 9.0/9.0	79.1			78.4
4	4.09	dd 9.0/8.8	71.1			70.7
5	3.98	ddd 8.8/2.2/4.6	79.3			78.4
6	4.61 4.26	dd 2.2/11.7 dd 4.6/11.7	62.1	4.31 4.22	dd 2.5/12.3 dd 4.0/11.7	61.8

FIGURE 7

FIGURE 8

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SEQ ID NO:16 HQVEVVPVGLLPPRIIPGDEKDETWSIKKWLDCGKQGSVVVALGSEALV
SEQ ID NO:12 HQVPVVPVGLLPPRIIPGDEKDETWSIKKWLDCGKQGSVVVALGSEALV
SEQ ID NO: 5 HQVPVVPVGLLPPRIIPGDEKDETWSIKKWLDCGKQGSVVVALGSEALV
SEQ ID NO:10 HQVPVVPVGLLPPRIIPGDEKDETWSIKKWLDCGKQGSVVVALGSEALV
*****
SEQ ID NO:14 SQTVEVELALGLELSGLPFVWAYRKPKGPAKSDSVLPDGFVERTDRGL
SEQ ID NO:16 SQTVEVELALGLELSGLPFVWAYRKPKGPAKSDSVLPDGFVERTDRGL
SEQ ID NO:12 SQTVEVELALGLELSGLPFVWAYRKPKGPAKSDSVLPDGFVERTDRGL
SEQ ID NO: 5 SQTVEVELALGLELSGLPFVWAYRKPKGPAKSDSVLPDGFVERTDRGL
SEQ ID NO:10 SQTVEVELALGLELSGLPFVWAYRKPKGPAKSDSVLPDGFVERTDRGL
*****
SEQ ID NO:14 VWTSWAPQLRIILSHESVCGFLTHCGSGSIVEGLMFGHPLIMLPIFGDQPL
SEQ ID NO:16 VWTSWAPQLRIILSHESVCGFLTHCGSGSIVEGLMFGHPLIMLPIFGDQPL
SEQ ID NO:12 VWTSWAPQLRIILSHESVCGFLTHCGSGSIVEGLMFGHPLIMLPIFGDQPL
SEQ ID NO: 5 VWTSWAPQLRIILSHESVCGFLTHCGSGSIVEGLMFGHPLIMLPIFGDQPL
SEQ ID NO:10 VWTSWAPQLRIILSHESVCGFLTHCGSGSIVEGLMFGHPLIMLPIFGDQPL
*****
SEQ ID NO:14 NARLLEDKQVGIEIPRNEEDGCLTKESVARSLRSVVVNEGEIYKANARA
SEQ ID NO:16 NARLLEDKQVGIEIPRNEEDGCLTKESVARSLRSVVVNEGEIYKANARA
SEQ ID NO:12 NARLLEDKQVGIEIPRNEEDGCLTKESVARSLRSVVVNEGEIYKANARE
SEQ ID NO: 5 NARLLEDKQVGIEIPRNEEDGCLTKESVARSLRSVVVNEGEIYKANARE
SEQ ID NO:10 NARLLEDKQVGIEIPRNEEDGCLTKESVARSLRSVVVNEGEIYKANARE
*****
SEQ ID NO:14 LSKIYNDTKVEKEVVSQFVDYLEKNARAVAIKHES
SEQ ID NO:16 LSKIYNDTKVEKEVVSQFVDYLEKNARAVAIKHES
SEQ ID NO:12 LSKIYNDTKVEKEVVSQFVDYLEKNARAVAIKHES
SEQ ID NO: 5 LSKIYNDTKVEKEVVSQFVDYLEKNARAVAIKHES
SEQ ID NO:10 LSKIYNDTKVEKEVVSQFVDYLEKNARAVAIKHES
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CLUSTAL W (1.82) multiple sequence alignment

FIGURE 8 (CONT.)

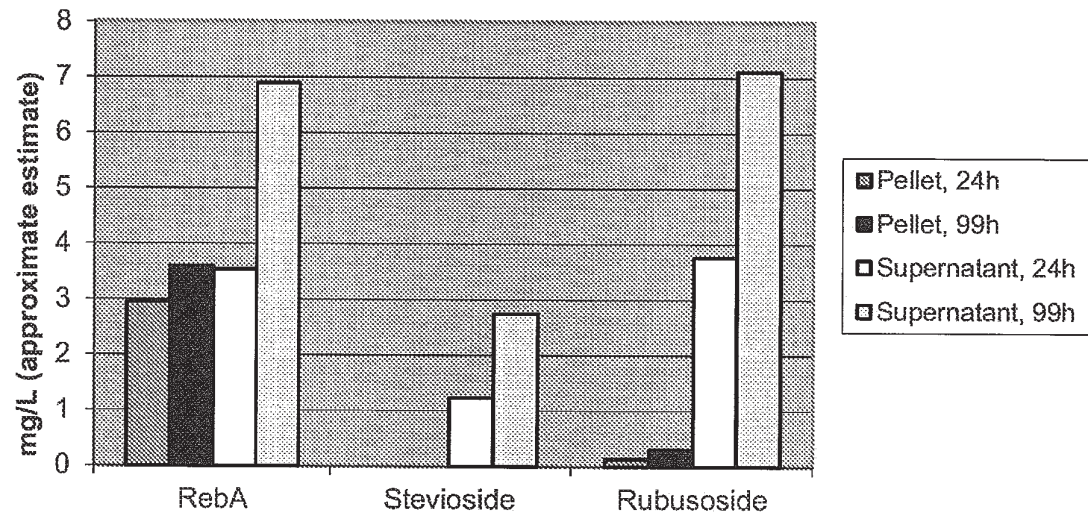


FIGURE 9

FIGURE 10A

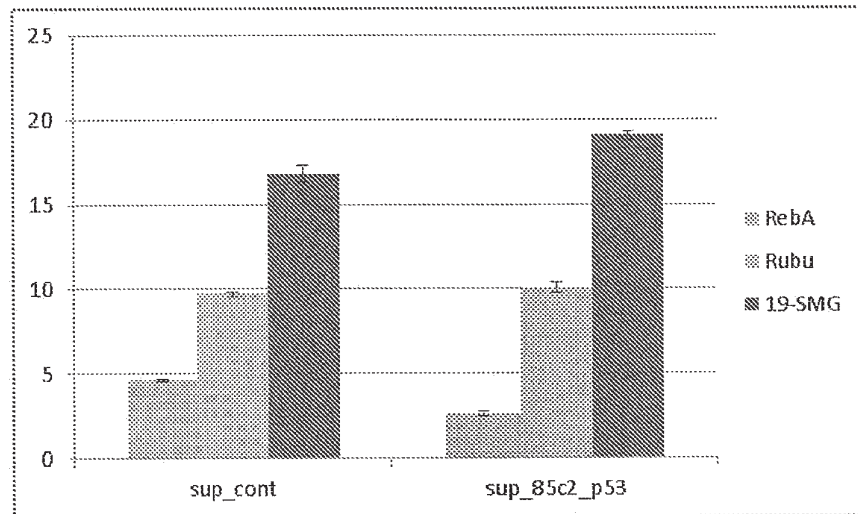


FIGURE 10B

