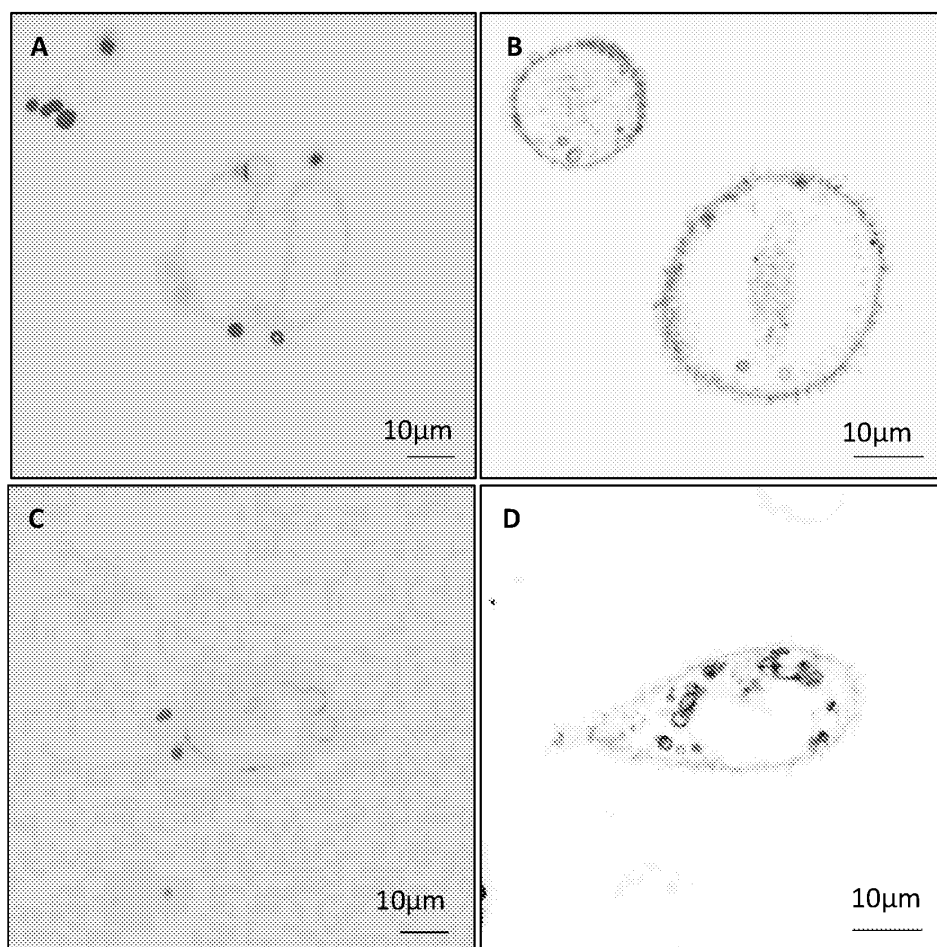




Left: Golgi (A & C); Right: GLUT1 (B & D)

Figure 1

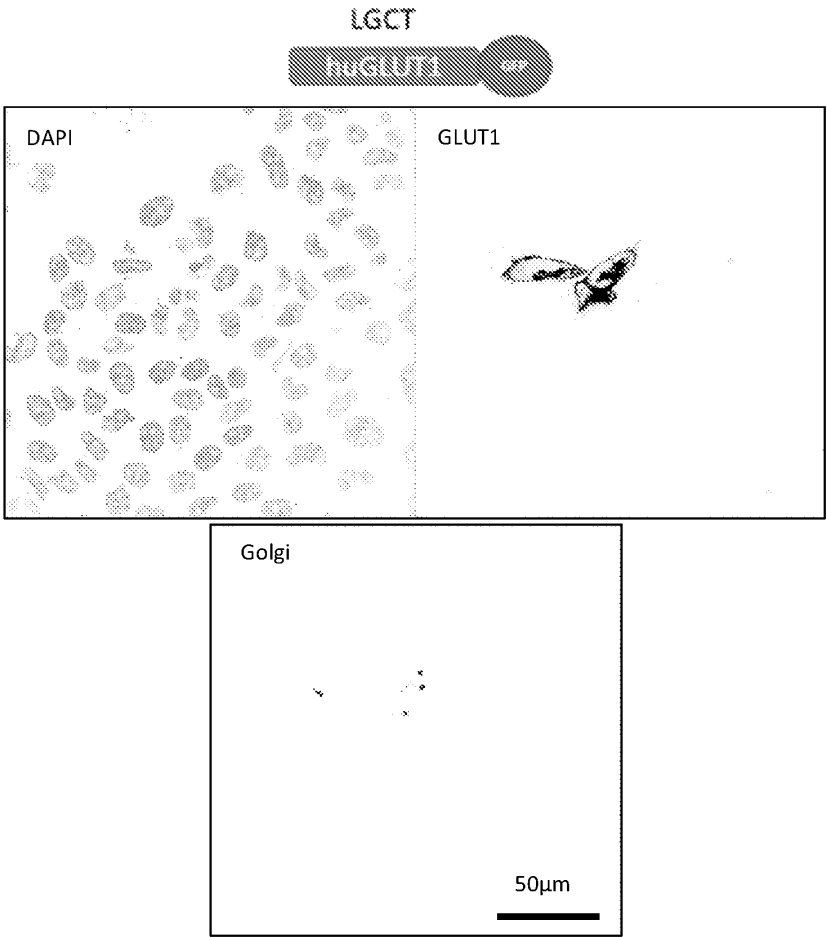


Figure 2

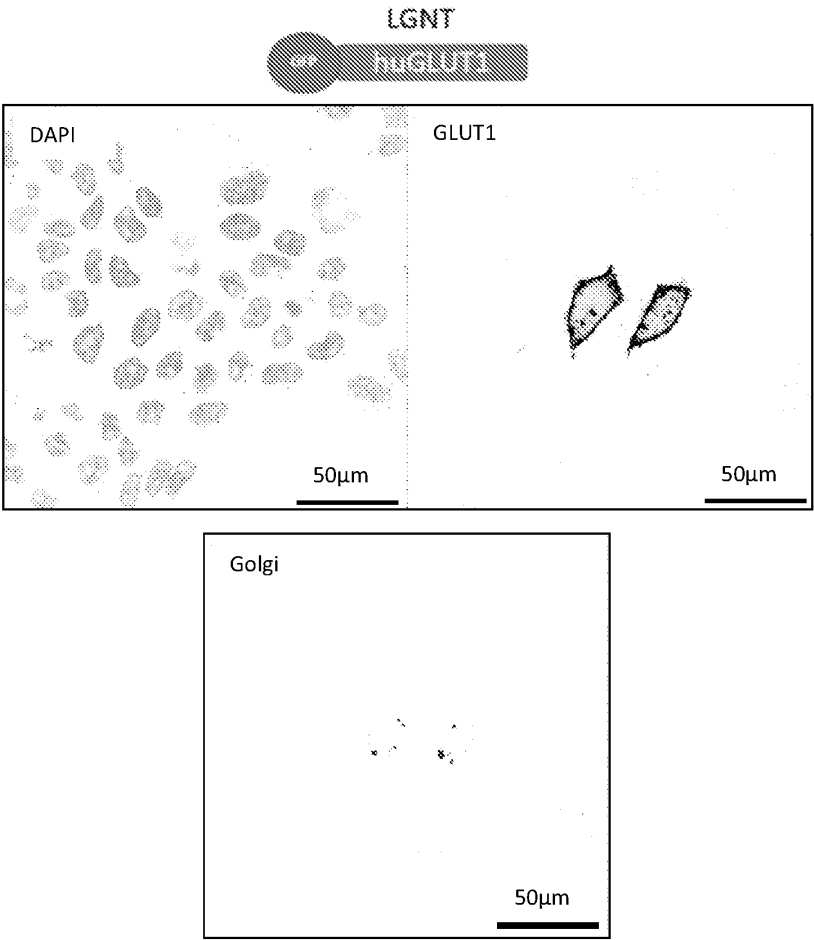


Figure 2
(Continued)

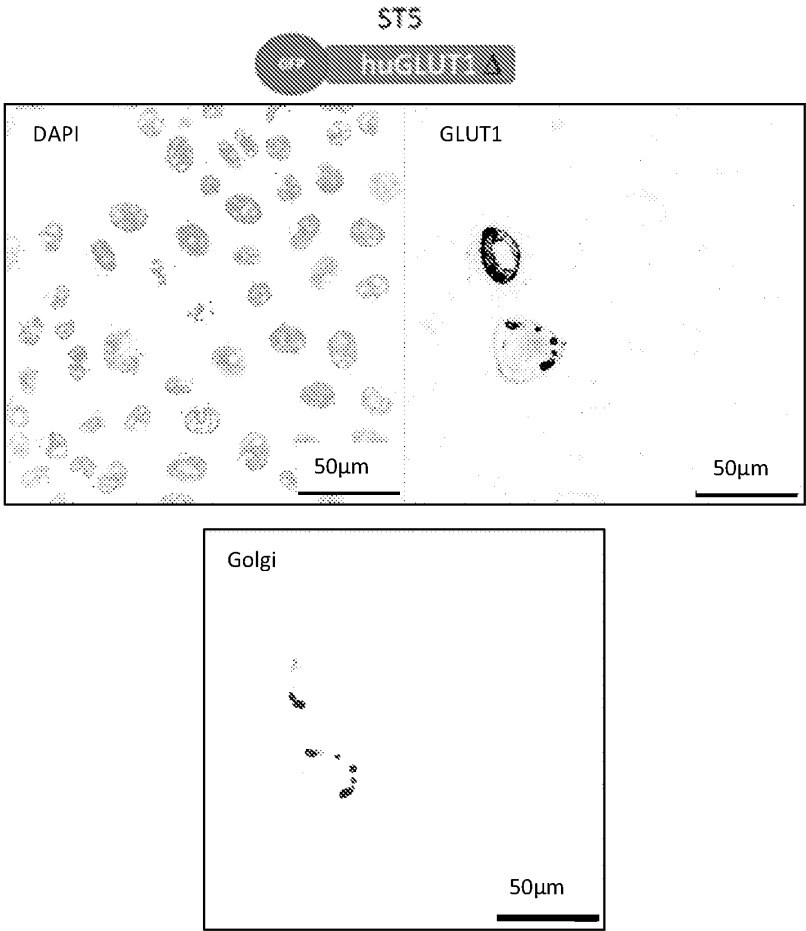


Figure 2
(Continued)

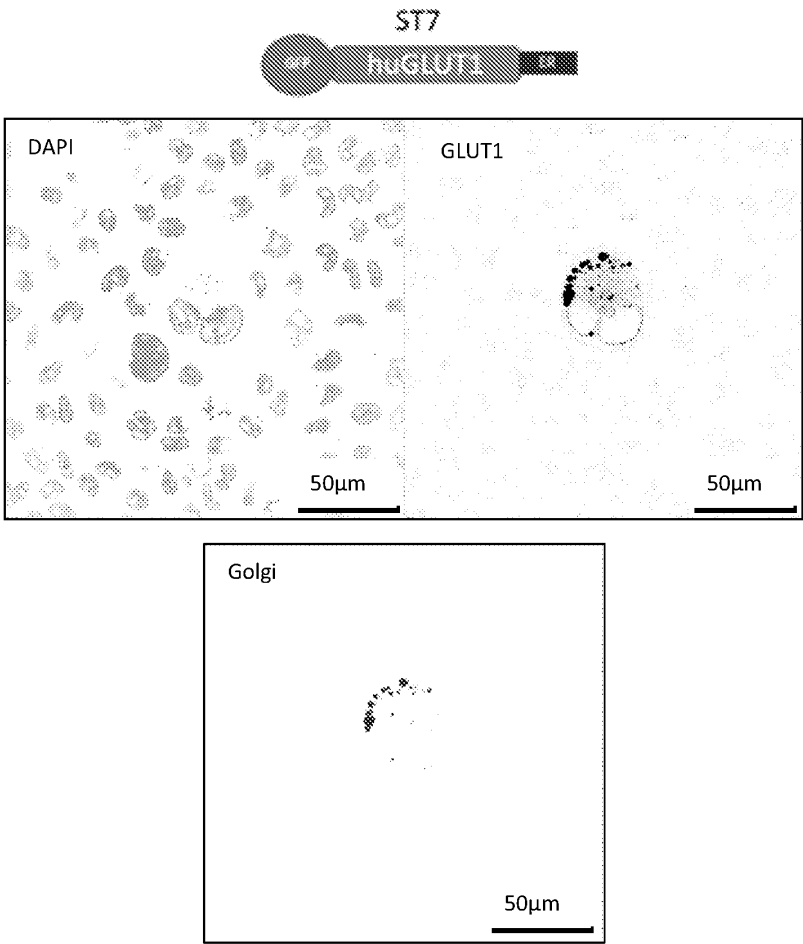


Figure 2
(Continued)

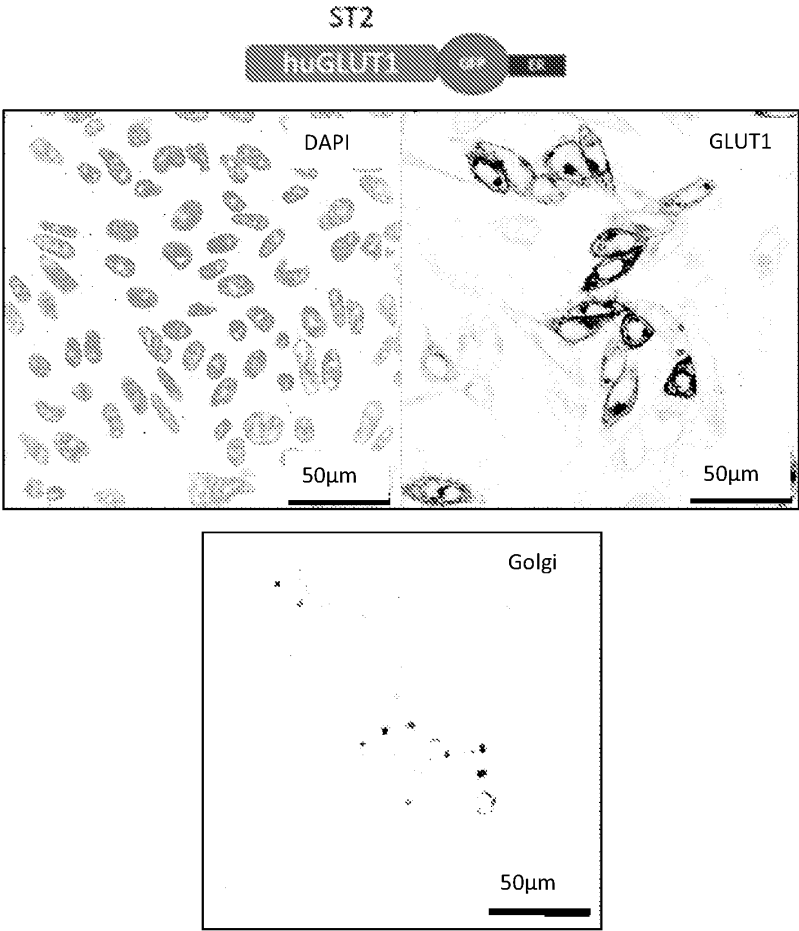


Figure 2
(Continued)

7/39

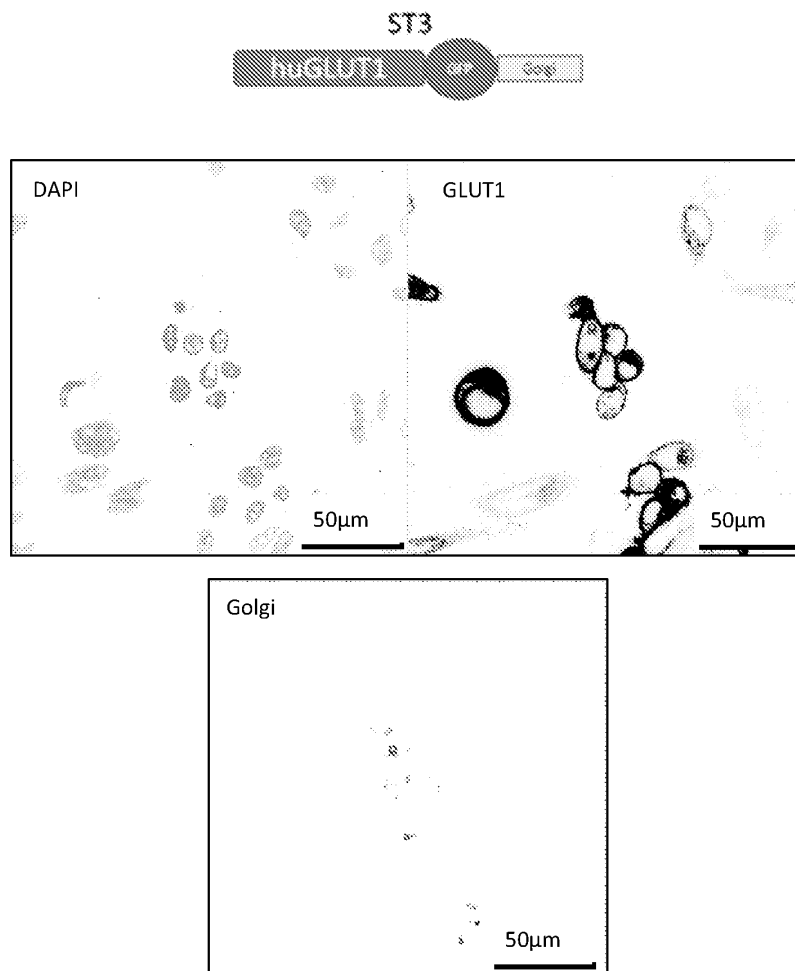


Figure 2
(Continued)

8/39

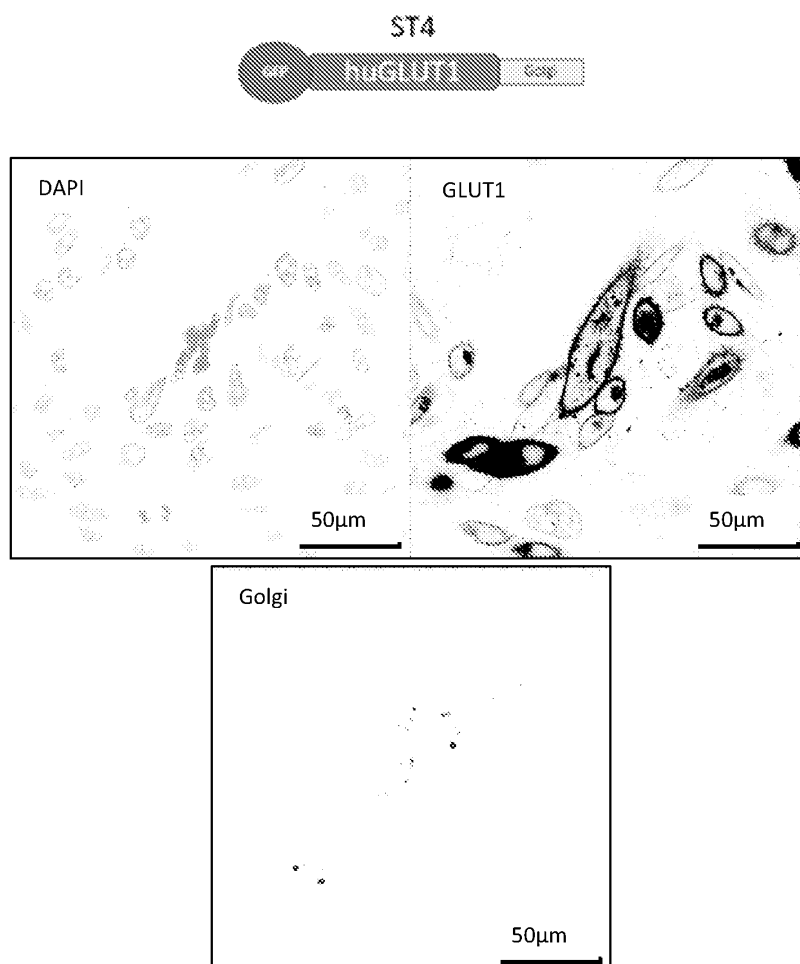


Figure 2
(Continued)

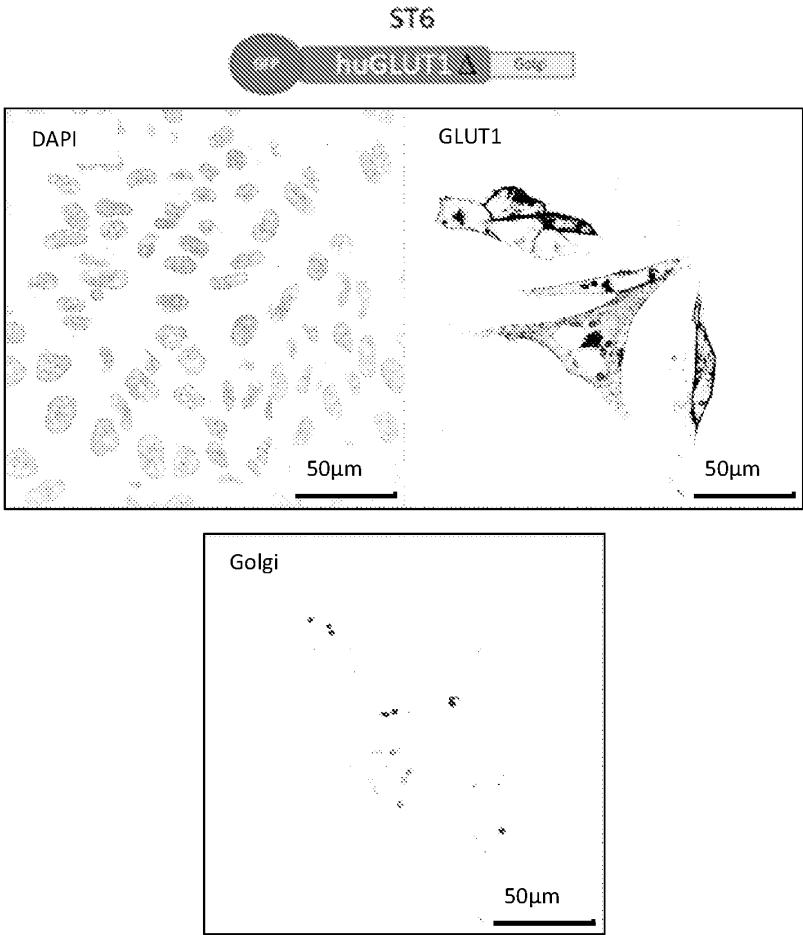


Figure 2
(Continued)

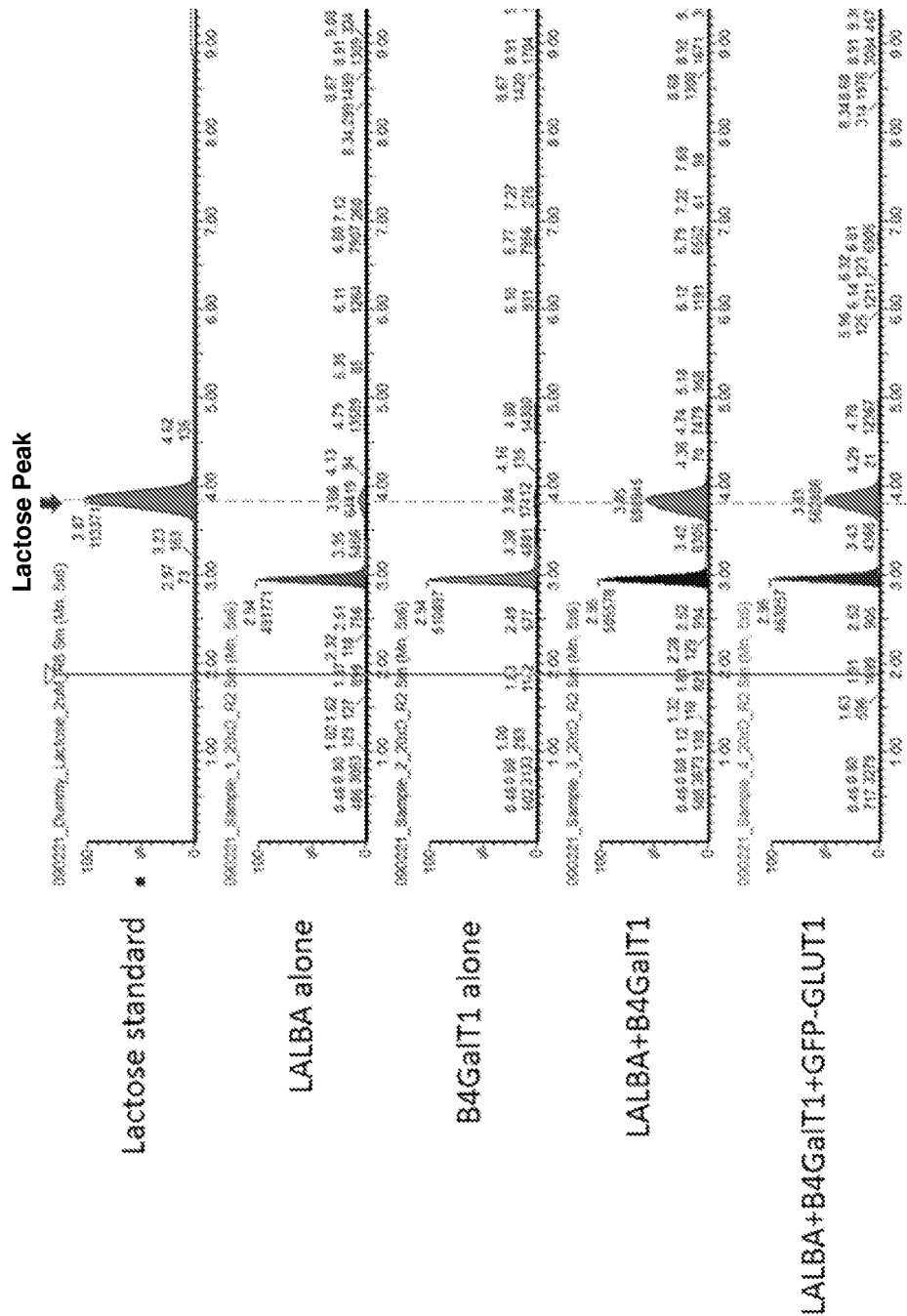


Figure 3

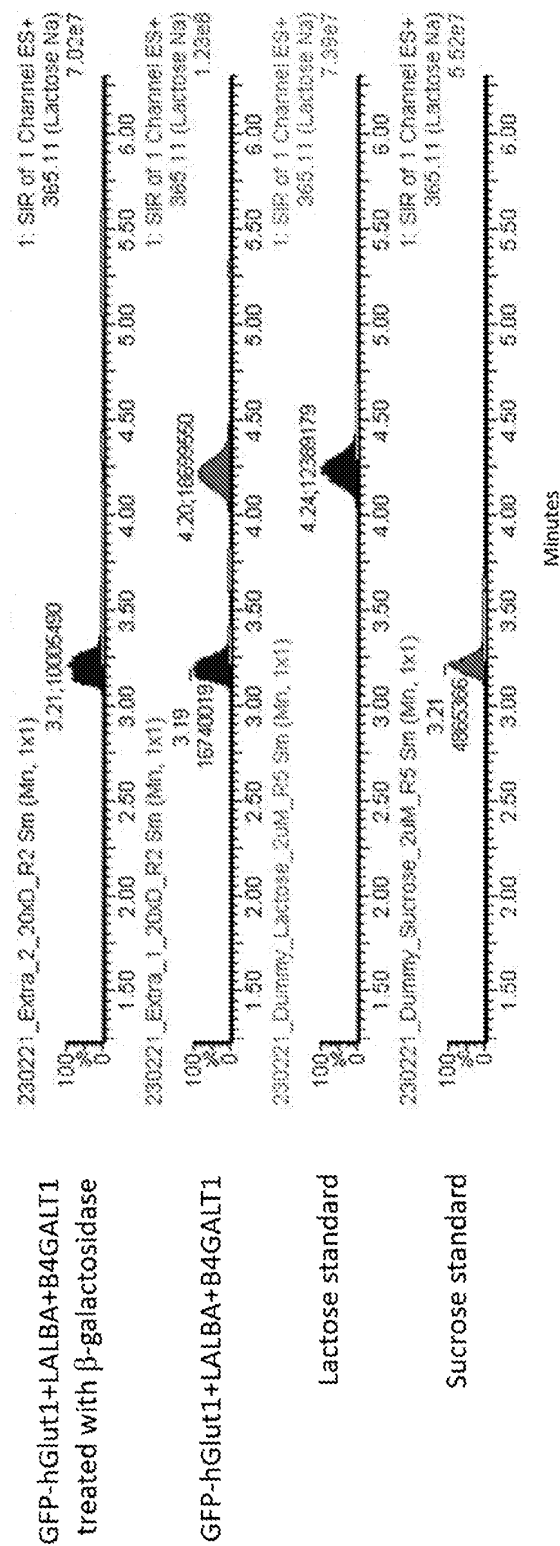


Figure 4

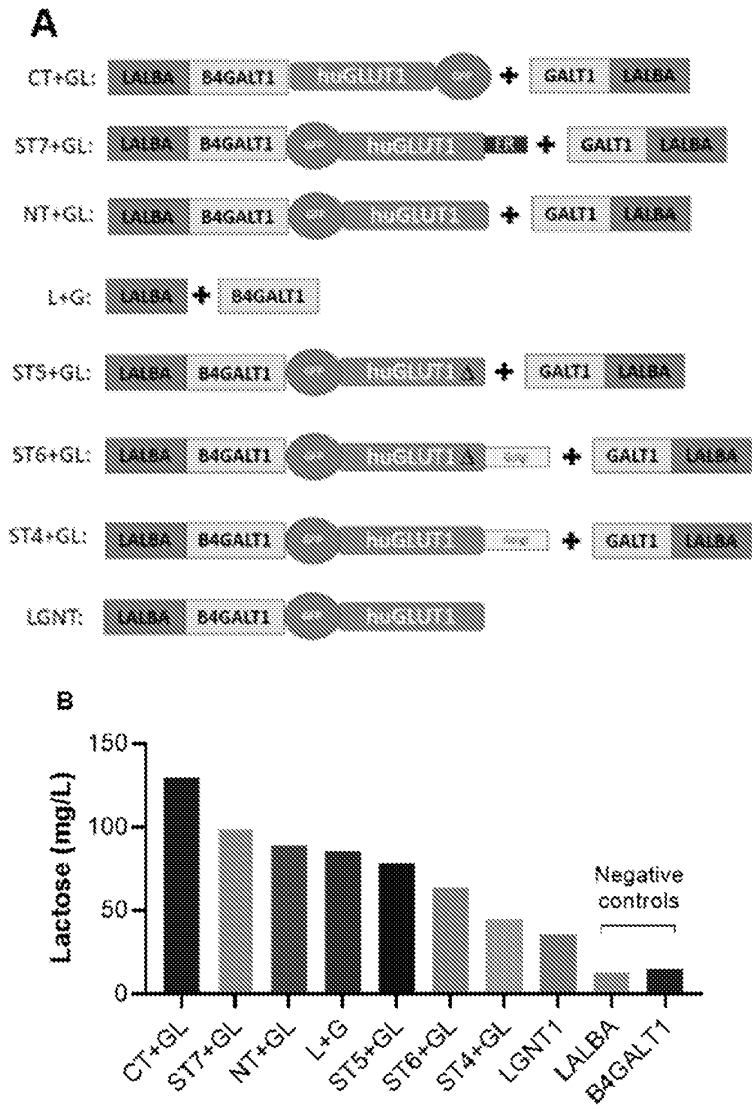


Figure 5

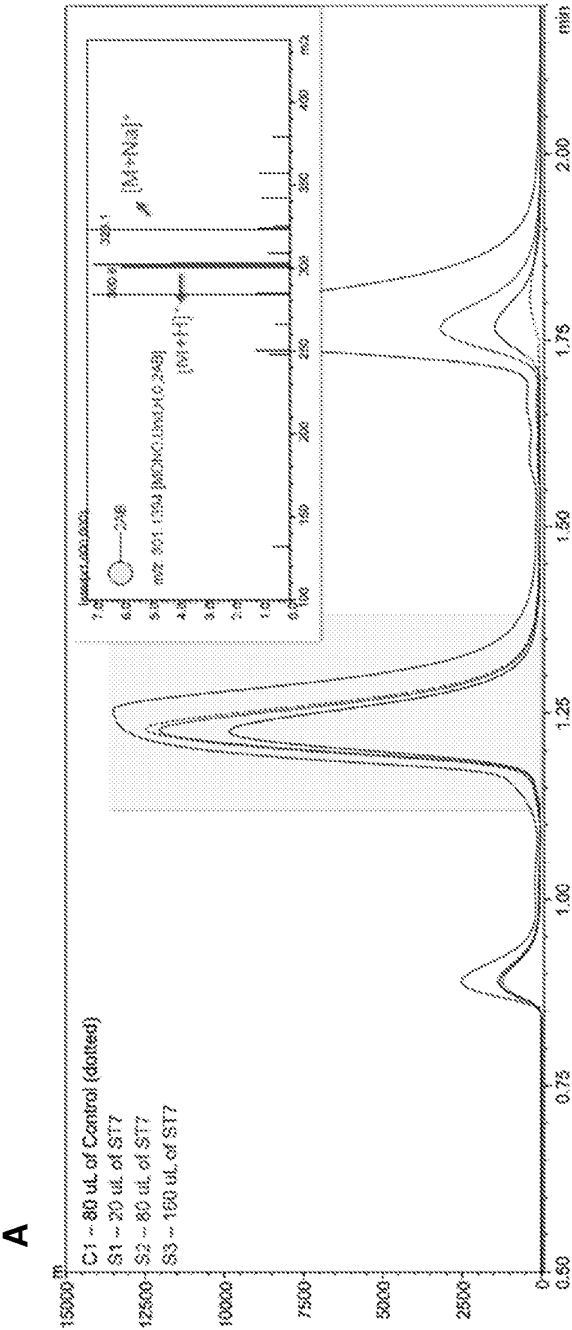


Figure 6

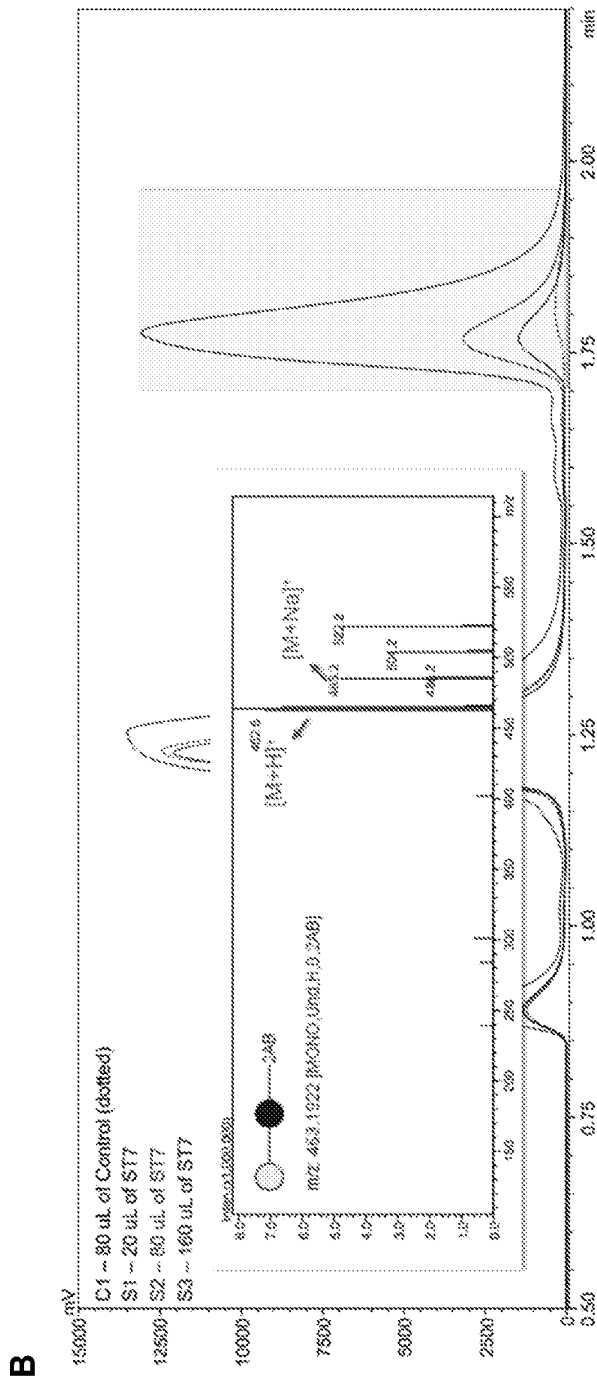


Figure 6
(continued)



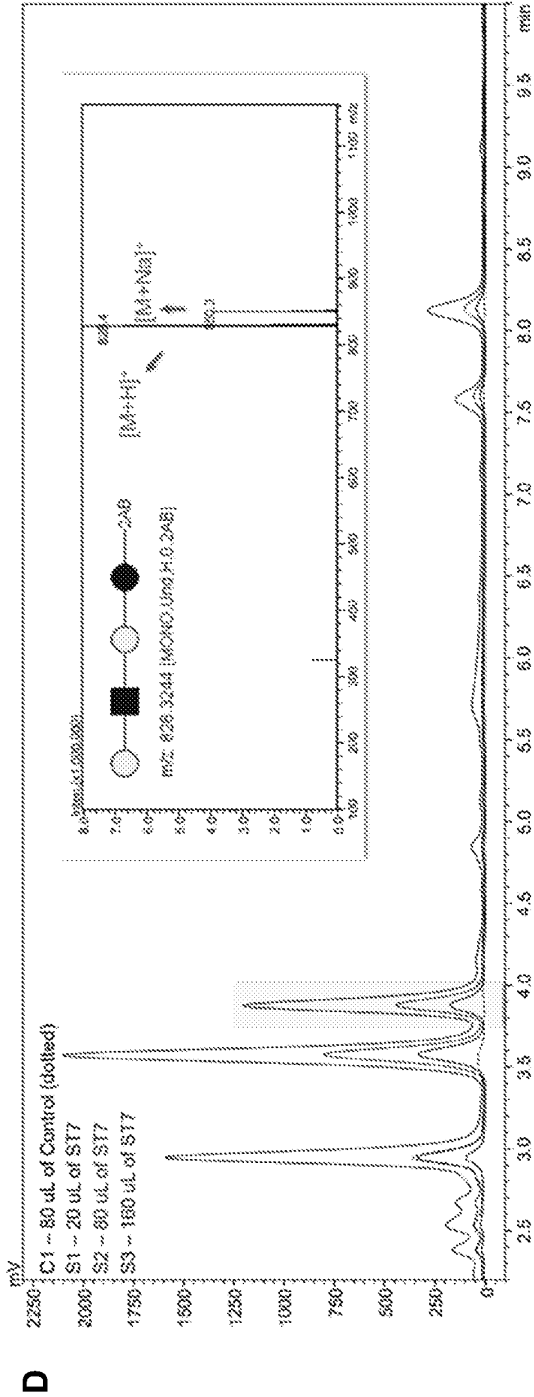


Figure 6
(continued)

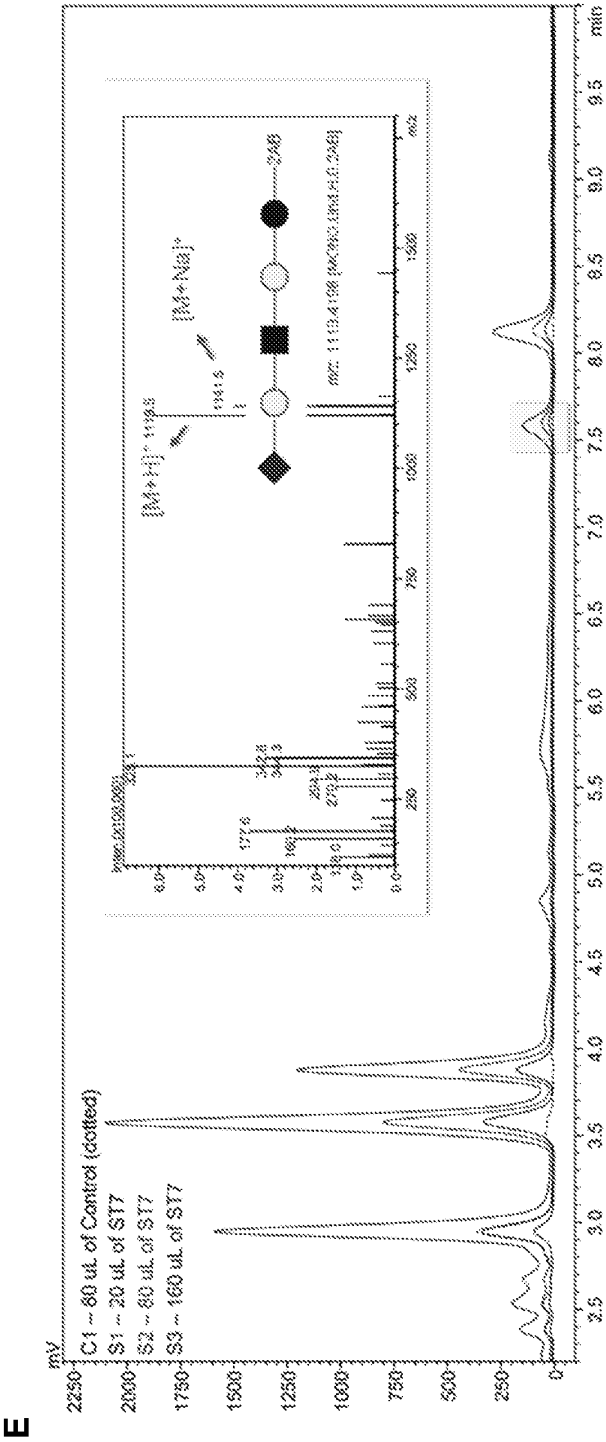


Figure 6
(continued)

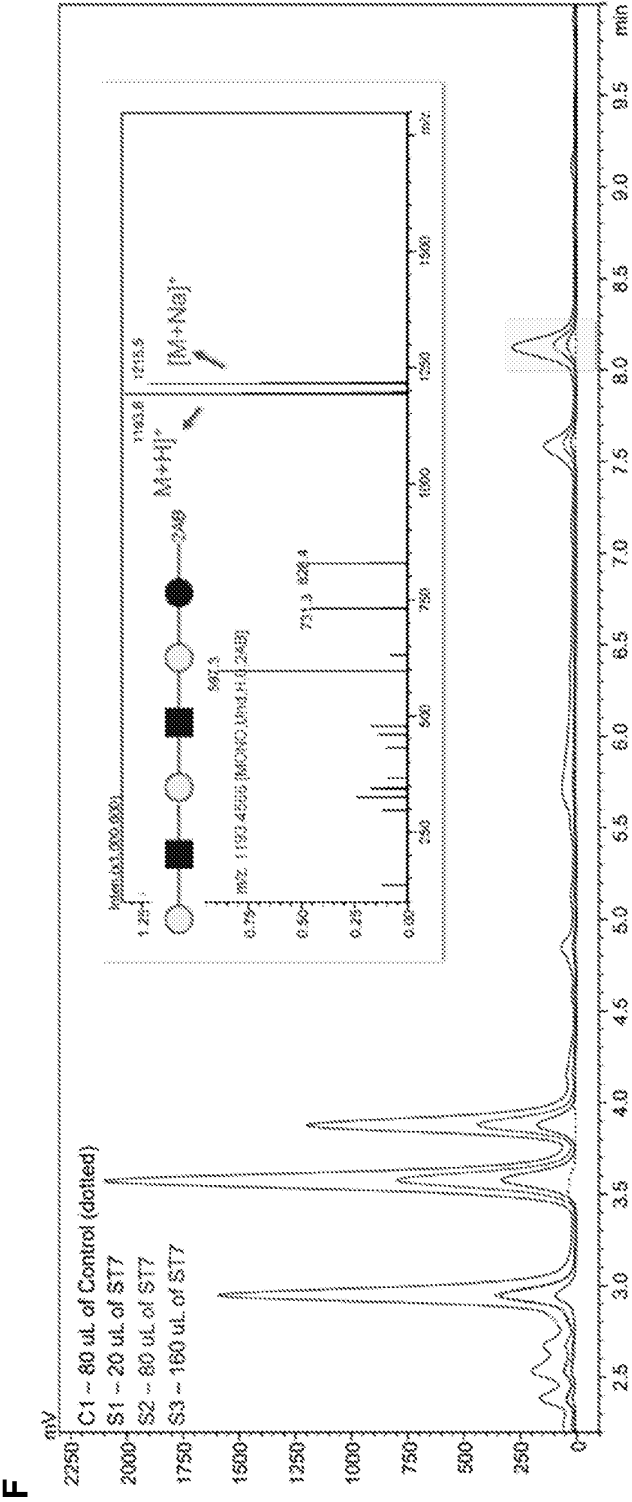


Figure 6
(continued)

G

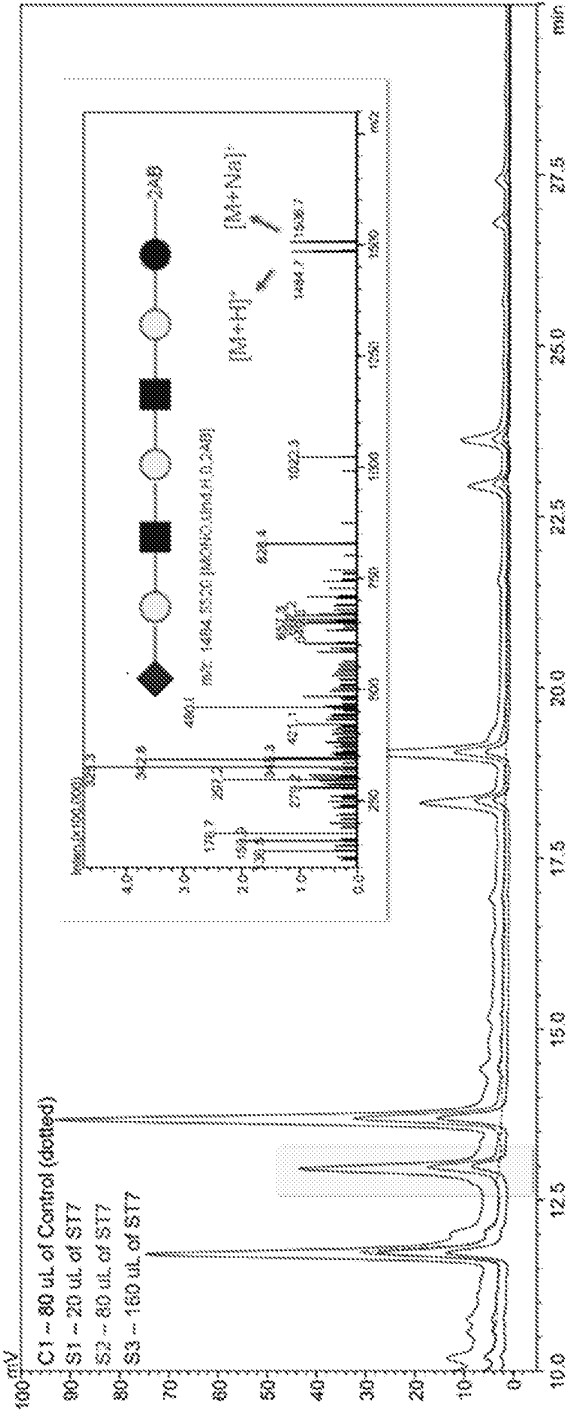


Figure 6
(continued)

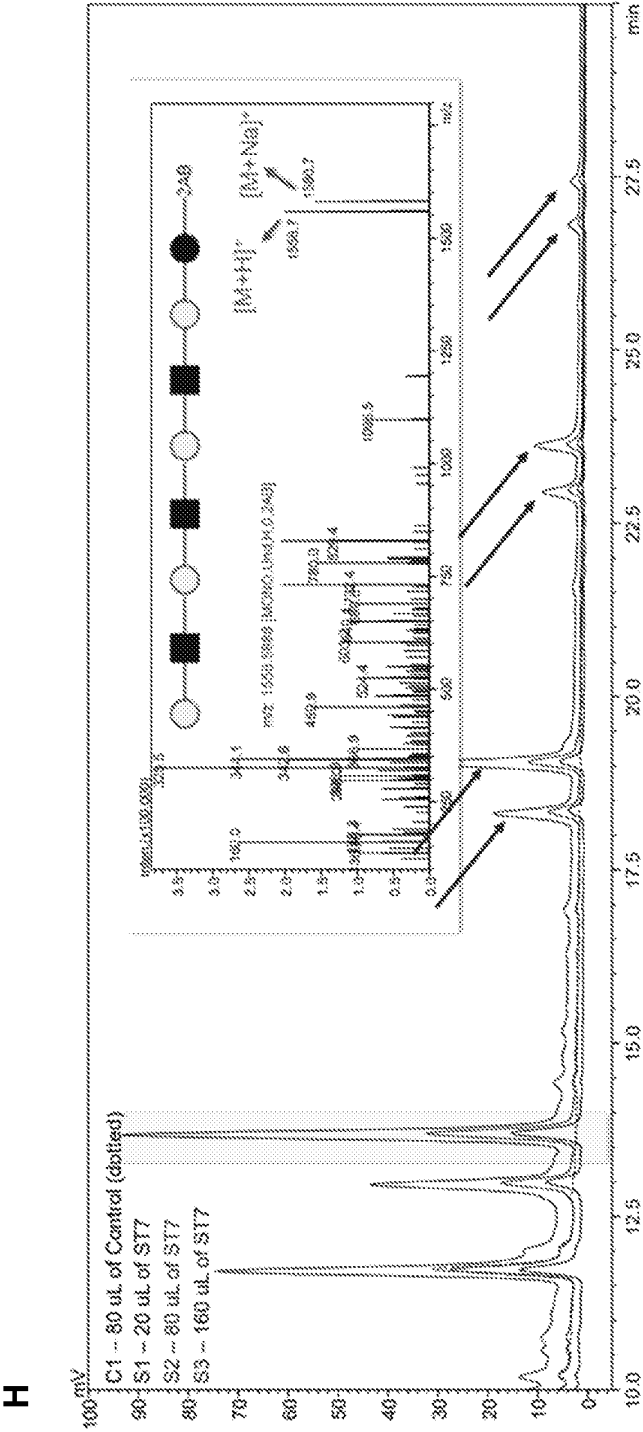


Figure 6
(continued)

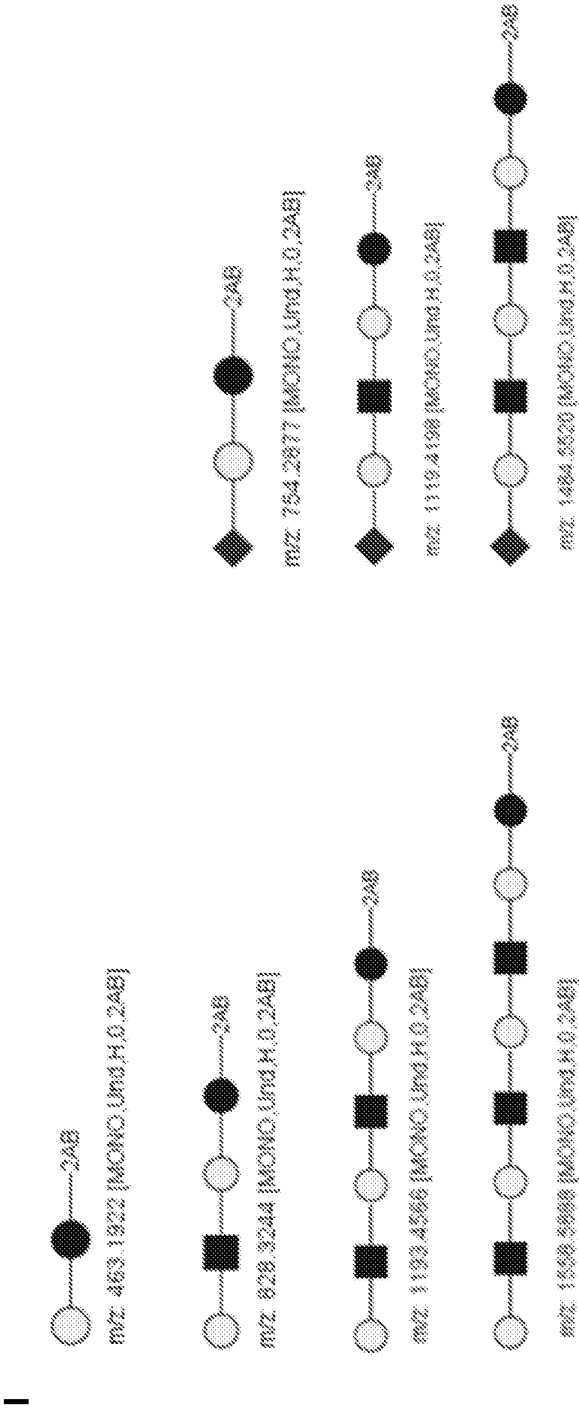


Figure 6
(continued)

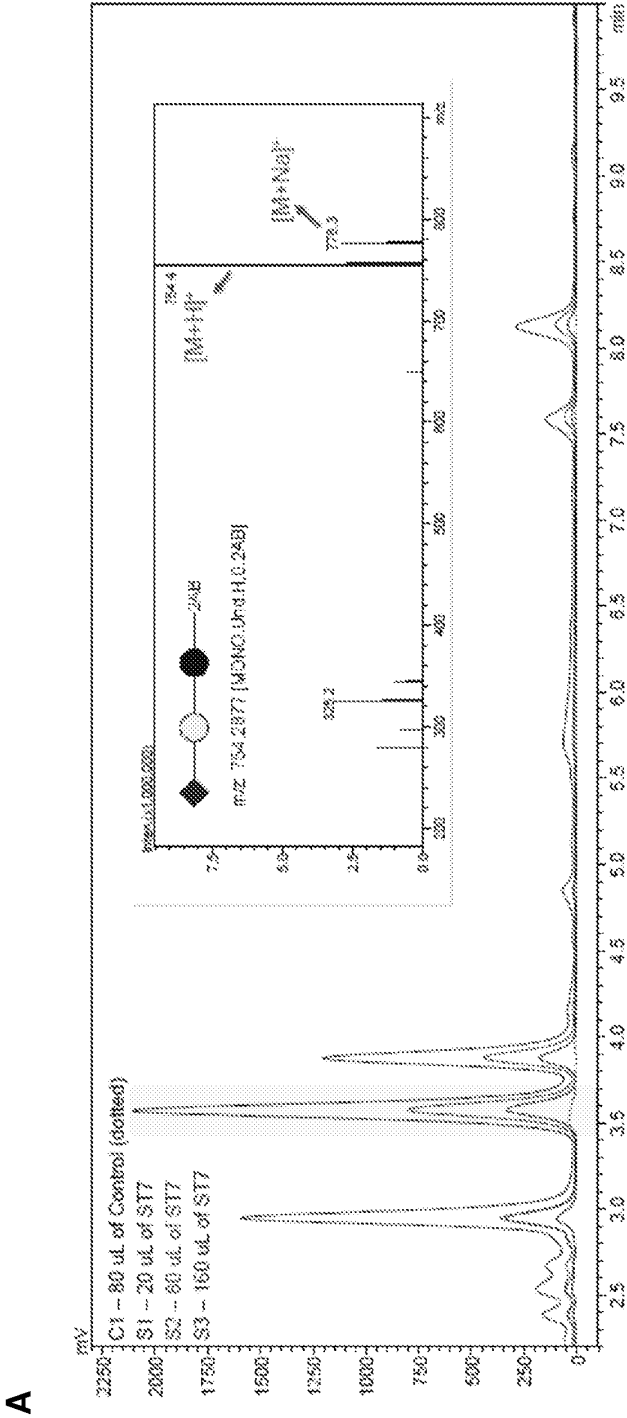


Figure 7

B

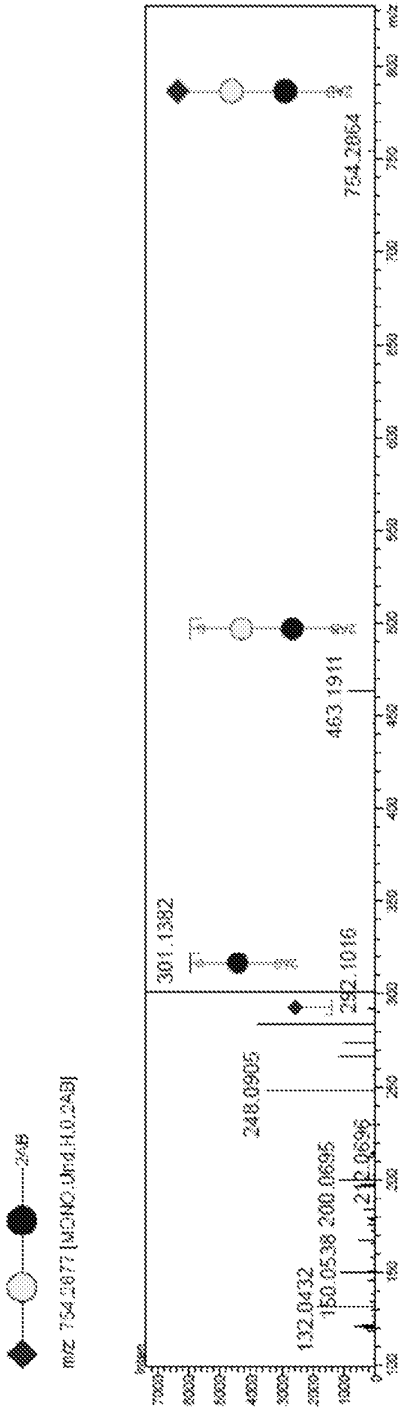


Figure 7
(Continued)

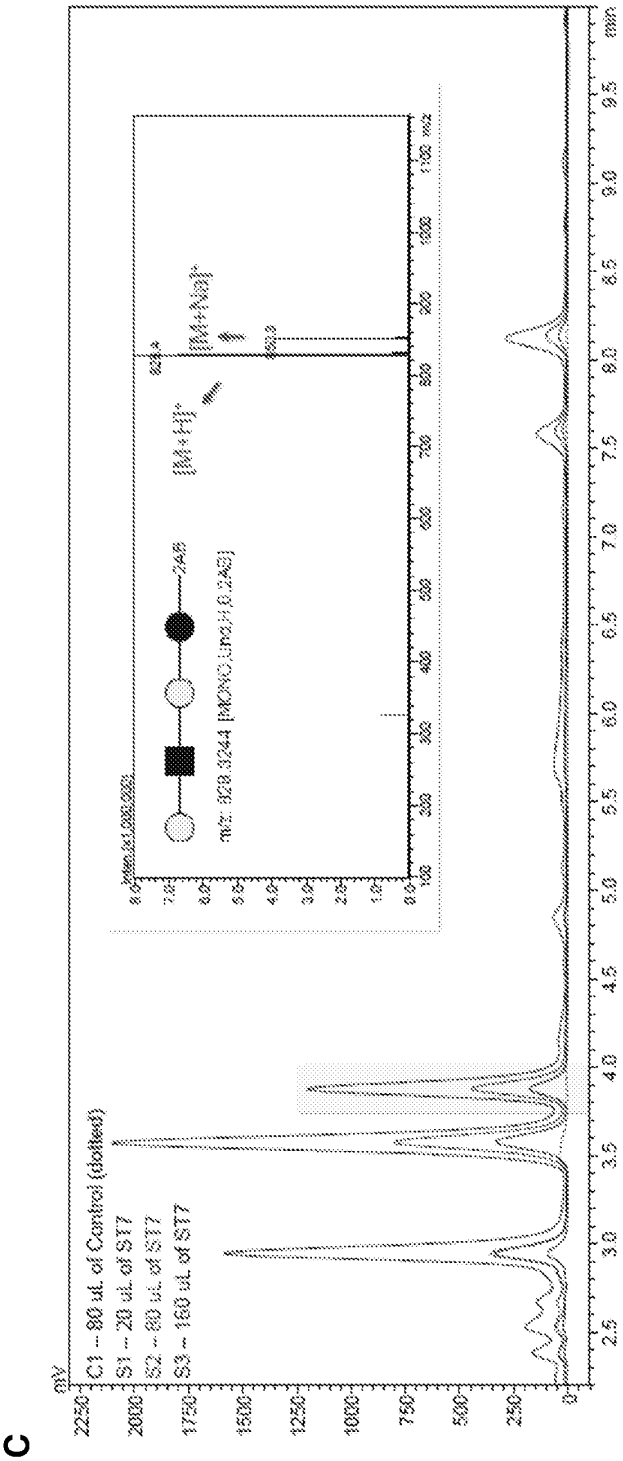


Figure 7
(Continued)

D

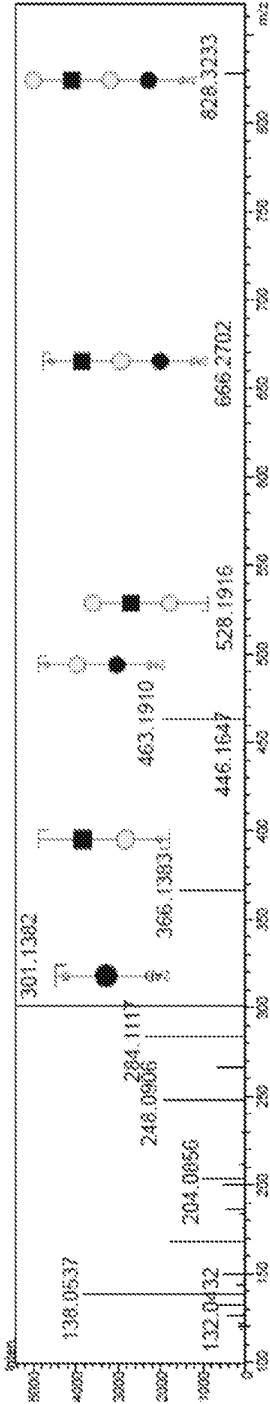
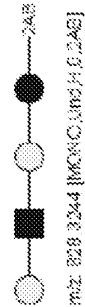


Figure 7
(Continued)

A

1. hLALBA-B4GALT1-hGLUT1-GFP (CT)

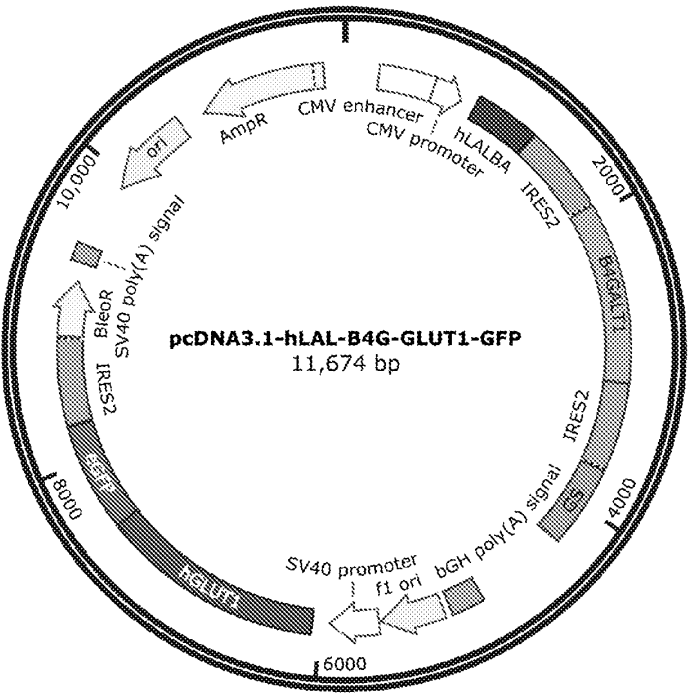


Figure 8

B

2. hB4GALT1-hLALBA

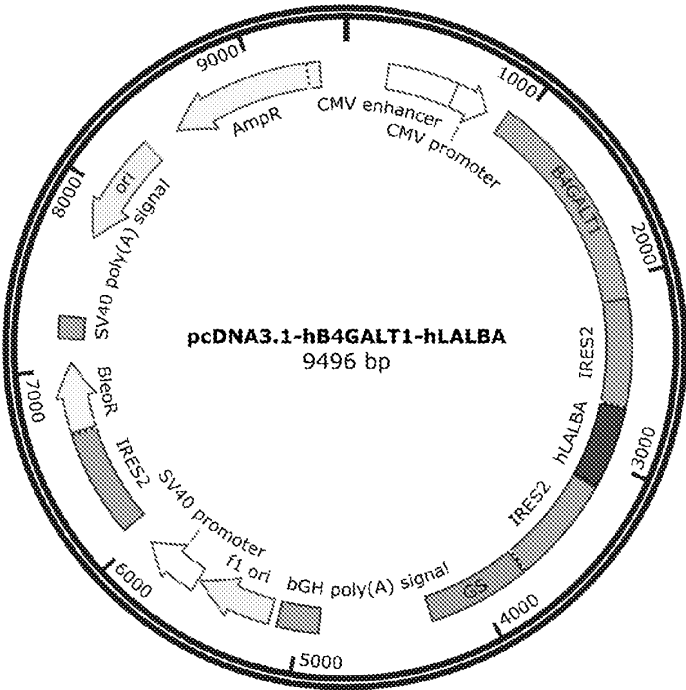


Figure 8
(Continued)

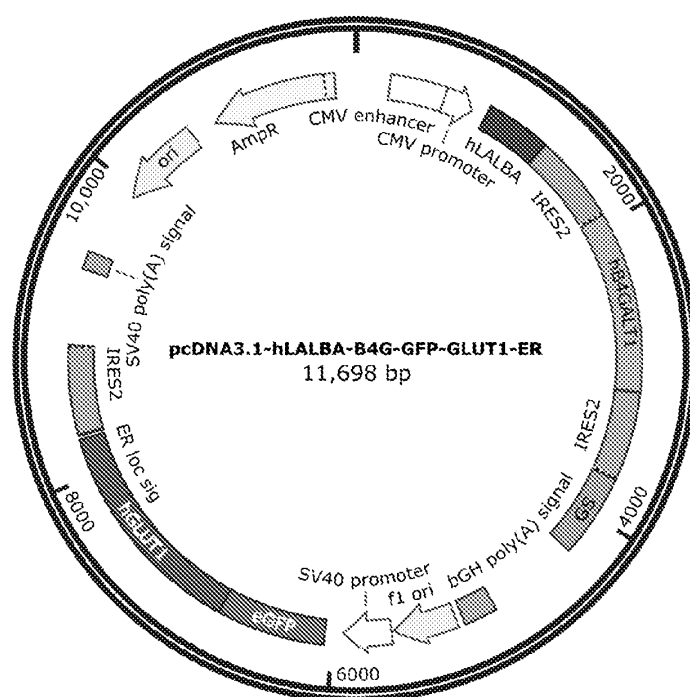
C**3. hLALBA-B4GALT1-GFP-hGLUT1-ER (ST7)**

Figure 8
(Continued)

D 4. hLALBA-B4GLT1-GFP-hGLUT1 (NT/LGNT)

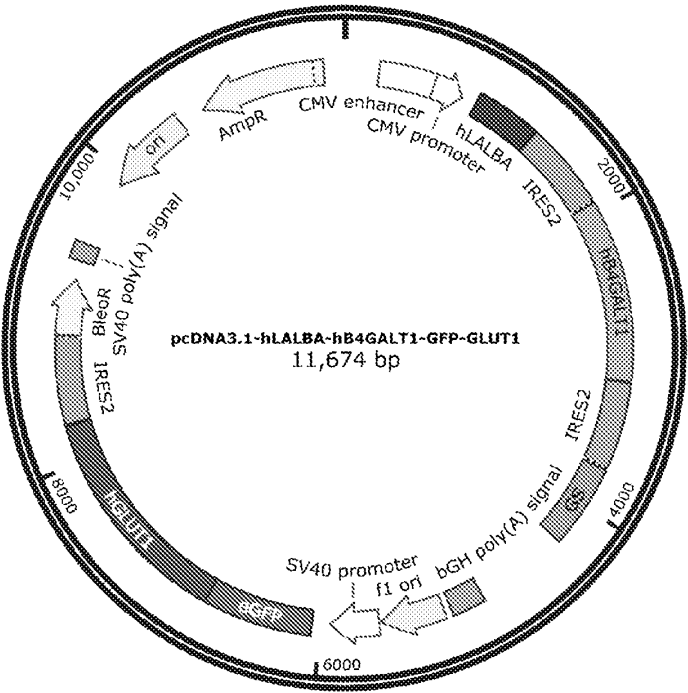


Figure 8
(Continued)

E 5. hLALBA

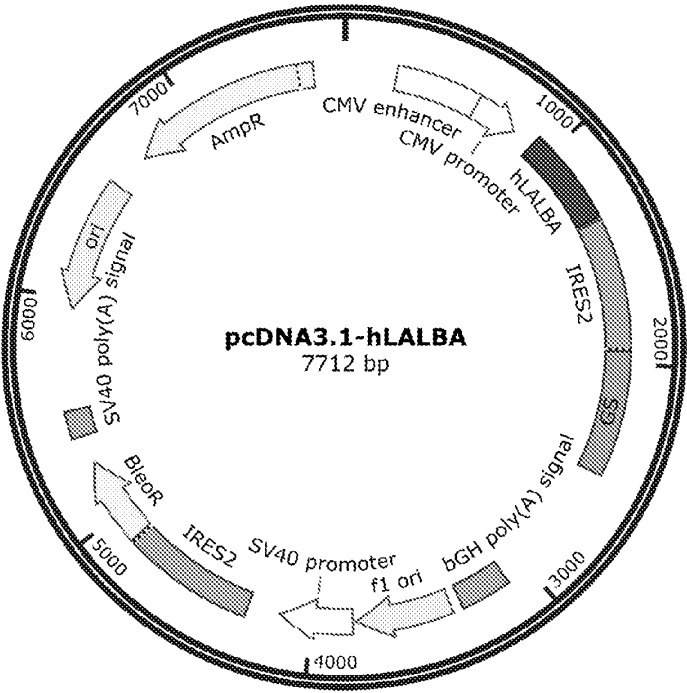


Figure 8
(Continued)

F

6. hB4GALT1

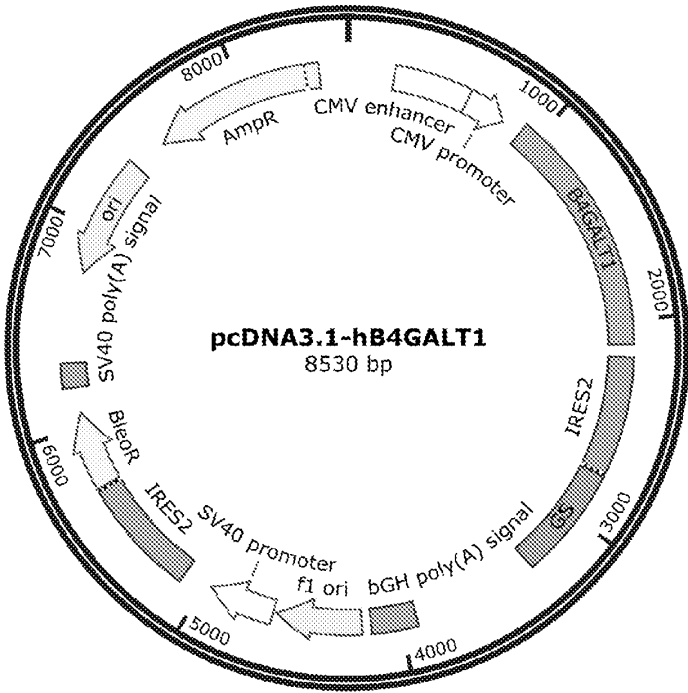


Figure 8
(Continued)

G

7. hLALBA-B4GALT1-GFP-hGLUT1Δ (ST5)

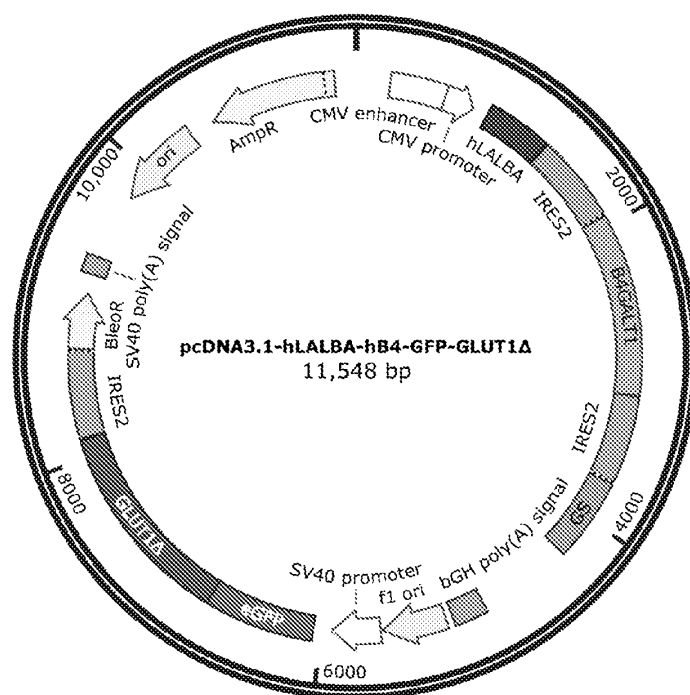


Figure 8
(Continued)

H 8. hLALBA-B4GALT1-GFP-hGLUT1Δ-golgi (ST6)

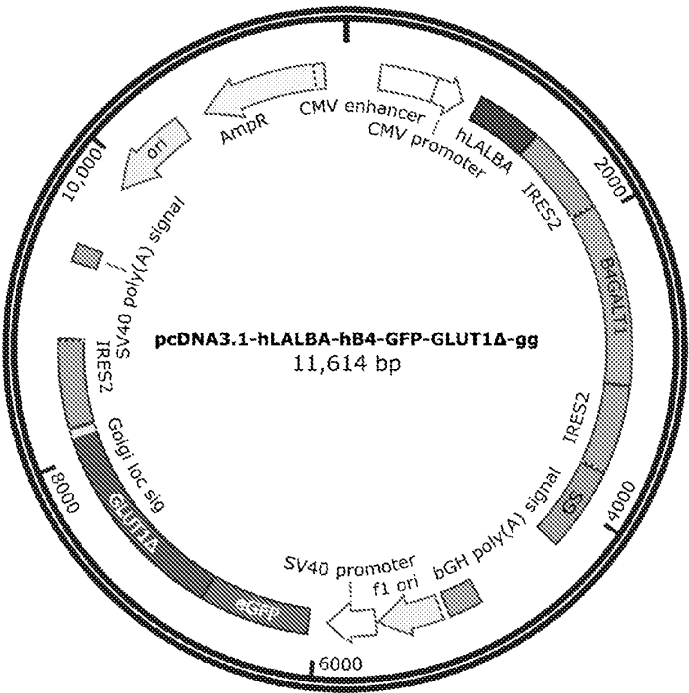


Figure 8
(Continued)

9. hLALBA-B4GALT1-GFP-hGLUT1-golgi (ST4)

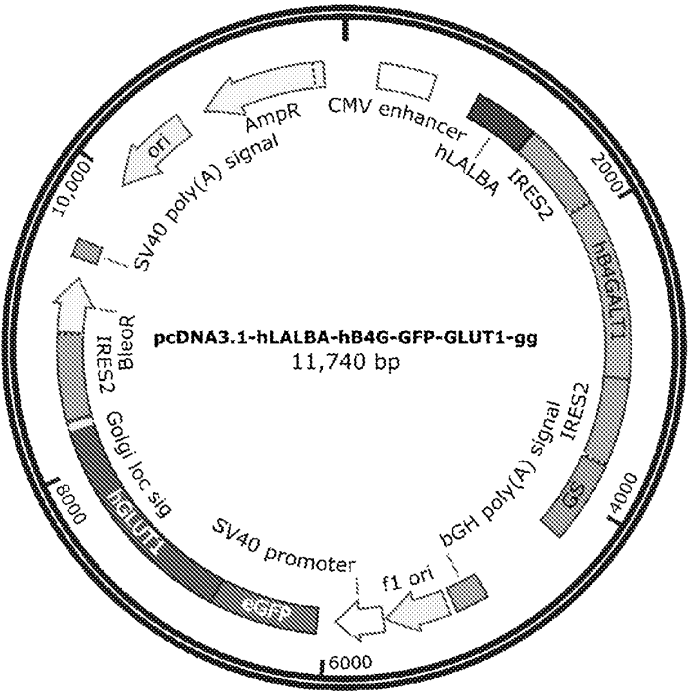


Figure 8
(Continued)

Homo sapiens lactalbumin alpha (LALBA), transcript variant 1, mRNA (SEQ ID NO: 1)

NCBI Reference Sequence: NM_002269.3

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>NM_002269.3 Homo sapiens lactalbumin alpha (LALBA), transcript variant 1, mRNA
ATGAGGTTCTTTGTCCTCTCTGTTCTGGTGGGCACTCTGTTCCCTGCCCCTCTGGCCAAAGCAATTCACAAAATGTGA
GCTGTGCCAGCTGCTGAAAGACATAGATGGTTATGGAGGCATCGCTTTGCTGAAATTGATCTGTACCATGTTTCACA
CCAGTGGTATATGACACACAGCCCTAGTTGAAACAAATGAAGGACCGGAATATGGACTCTTCCAGATCAGTATATAAG
CTTTGGTGCAGAGACAGCCAGGTCCTCTCAGTCAAGGACATCTGTGACATCTCTCTGTGACAAAGTTCTCTGGATGATGA
CATTAATGATGACATAATGTGTGGCCAGAGATCTCTGGATATTAAAGGAATTGACTACTGTTGGGCCATTAAGCCCT
CTCTGACTGACAAAGCTGGAACAGTGGCTTTGTGACAAATGTGTA
```

Homo sapiens beta-1,4-galactosyltransferase 1 (B4GALT1), transcript variant 1, mRNA (SEQ ID NO: 2)

NCBI Reference Sequence: NM_001497.4

```
>NM_001497.4 Homo sapiens beta-1,4-galactosyltransferase 1 (B4GALT1), transcript variant 1, mRNA
ATGAGGCTTCGGGAGCTCGCTTCTGAGGGGAGCGCCGGGATGCCAGGCGCGTCCCTACAGCGGGGCTTGCCGCTGCT
CGTGGCCGCTCTGCGCTCTGCAACCTTGGGCTCACCCCTGTTTACTACCTTGGCTGGCCGCGACCTGAGCCGCGCTGCCCC
AACTGGTCCGAGTCTCCACACCCGCTGCAAGGCGCGGCTCGAACAGTGGCCGCGCCATCGGGCAGTCCCTCCGGGGAGCTC
CGGACCGGAGGGGCCCGGCCCGCCCTCTCTAGGCGGCTCTCTCCAGCGCGGCCCGGGTGGGCGACTCCAGCCAGT
CGTGGATCTCTGGCCCTGGCCCGCTAGCAACTTGACCTCGGTCCCACTGCCCCACACCCGCACTGTGCGCTGCCCCG
CTTGCCCTGAGGAGTCCCGCTGCTGTGTGGGCCCGCATGCTGATTGAGTTTAACATGCTGTGGACCTGGAGCTGTGTG
GCAAGCAGAACCCCAATGTGAAGATGGGCGCGCGCTATGCCCCCAGGGAATGCGTCTCTCTCTCACAAGGTGGCCAT
CATCATTCATTCCGCAACCGGCAGGAGCACCTCAAGTACTGGCTATATTTATTTGCACCCAGTCCCTGCAAGCGCCAGC
AGCTGGACTATGGCATCTATGTTATCAACCGAGCGGGAGACACIATATTCATCGTGTCTAAGCTCCTCAATGTTGGC
TTTCAAGAAAGCCTTGAAGGACTATGACTACACCTGCTTTGTSTTTAGTGACGTGGACCTCATTCCATGAAATGACCA
TAATGCTGCAGTGTGTTTTGCACAGCTACGGCCACATTTCCGTTGCAATGGATAAGTTTGGATTCAGCCCTACCTTATG
TTCAGTATTTTGGAGGTGCTCTCTGCTCTAAGTAAACAACAGTTTCTAACCATCAATGGATTTCTAATATTTATTTGG
GGCTGGGGAGGAGAAGATGATGACATTTTAAACAGATTAGTTTTTAAAGGSCATGTCTATATCTCGCCCCAATGCTGT
GGTCCGGAGGTGTGCTATGATCCGCCACTCAAGAGACAAGAAAAATGAACCCAACTCTCAGAGGTTTGAACCAATTG
CACACACAAGGAGACAAATGCTCTCTGATGTTTGAATCACTCACTCACTCACTCACTCACTCACTCACTCACTCACTCACT
TTGTATACCCAAATCACAGTGGGACATCGGGACACCGAGCTAG
```

Figure 9

Homo sapiens solute carrier family 2 member 1 (SLC2A1)/GLUT1 transporter), mRNA

NCBI Reference Sequence: NM_005516.4

GLUT1 (full-length sequence) (SEQ ID NO: 3)

ATGGAGCCCAGCAGCAAGAAGCTGACGGGTCGCCTCATGCTGGCCGTGGGAGGAGCAGT
GCTTGGCTCCCTGCAGTTTGGCTACAACACTGGAGTCATCAATGCCCCCAGAAGGTGAT
CGAGGAGTTCTACAACCAGACATGGGTCCACCGCTATGGGGAGAGCATCCTGCCCCACCA
CGCTCACCACGCTCTGGTCCCTCTCAGTGGCCATCTTTCTGTTGGGGGCATGATTGGCTC
CTTCTCTGTGGGCCCTTTTCGTTAACCGCTTTGGCCGGCGGAATTCAATGCTGATGATGAAC
CTGCTGGCCTTCGTGTCCGCCGTGCTCATGGGCTTCTCGAACTGGGCAAGTCCTTTGAG
ATGCTGATCCTGGGCCGCTTCATCATCGGTGTGTACTGCGGCCTGACCACAGGCTTCGTG
CCCATGTATGTGGGTGAAGTGTACCCACAGCCCTTCGTGGGGCCCTGGGCACCCCTGCAC
CAGCTGGGCATCGTCGTCGGCATCCTCATCGCCAGGTGTTCCGGCCTGGACTCCATCATG
GGCAACAAGGACCTGTGGCCCTGCTGCTGAGCATCATCTTCATCCCGCCCTGCTGCAG
TGATCGTGTCTGCCCTTCTGCCCGAGAGTCCCCGCTTCCTGCTCATCAACCGCAACGAG
GAGAACCGGGCCAAGAGTGTGCTAAAGAAGCTGCGCGGGACAGCTGACGTGACCCATG
ACCTGCAGGAGATGAAGGAAGAGAGTCGGCAGATGATGCGGGAGAAGAAGGTCAACCAT
CCTGGAGCTGTTCCGCTCCCCCGCTACCGCCAGCCCATCCTCATCGCTGTGGTGCTGCA
GCTGTCCAGCAGCTGTCTGGCATCAACGCTGTCTTCTATTACTCCACGAGCATCTTCGA
GAAGGCGGGGGTGACAGCAGCCTGTGTATGCCACCATTTGGCTCCGGTATCGTCAACACGG
CCTTCACTGTCTGTCTGCTGTTTGTGGTGGAGCGAGCAGGCCGGCGGACCCTGCACCTCA
TAGGCCTCGCTGGCATGGCGGGTTGTGCCATACTCATGACCATCGCGCTAGCACTGCTGG
AGCAGCTACCCTGATGTCTATCTGAGCATCGTGGCCATCTTTGGCTTTGTGGCCTTCTT
TGAAGTGGGTCTGGCCCCATCCCATGGTTCATCGTGGCTGAACTCTTCAGCCAGGGTCC
ACGTCCAGCTGCCATTGCCGTTGCAGGCTTCTCCAAGTGGACCTCAAATTTCAATTGTGGG
CATGTGCTTCCAGTATGTGGAGCAACTGTGTGGTCCCTACGTCTTCATCATCTTCACTGTG
CTCCTGGTTCTGTTCTTCATCTTCACCTACTTCAAAGTTCCTGAGACTAAAGGCCGGACCT
TCGATGAGATCGCTTCCGGCTTCCGGCAGGGGGAGCCAGCCAAAGTGACAAGACACCC
GAGGAGCTGTTCCATCCCCTGGGGGCTGATTCCCAAGTGTGA

Figure 9
(Continued)

GAGCCGACGACGACGAAGAACCTGACGGGTGCGCTCATGCTGGCCGTGGGAGGAGCAGTGGCTTGGCTCCCTGAGTTTGGCTACCAACAC
 TGGAGTGTCTATCAATGGTCCCCCTAGAAAGGTGATAGGAGAGTGTCTACCAACGACAGATGGTGTGACGCGCTATGGGAGAGAGCATCTGGCCCCA
 CACGCTGACACGACGCTGTGGTCCCTTAAAGTGGGACATCTTTTCTGTGGGGGACGATAGGAGCTGTCTGTGGTGGGGCTTTTGGT
 AACCGCTTTTGGCGGGCGGCAATTCAATGCTGATGATGAACTGTGTGGCTTGTGTGTCGGCGCTGTCATGGCTGTCTCGAAGCTGGG
 CAAGTGTCTTTGAGATGTGATCTTGGGCGGCTCTCATCTACGTTGTGTATCTGGGCGCTGACACACAGGCTTGTGGCTCATGTATGG
 GTGAAGTGTGACACACAGGCTGTGGTGGGGGCTCTGGGACGCTGACACAGTGGGACATGCTGTGGGAGCTCTCATGGCCGACAGGTG
 TCGGGCTGGACCTCCATTTAGGGCAACACAGGAGCATGTGGGCGCTGTGCTGTGAGACATCATCTTTATCTGGGCGCTGTGGTGGCATGTG
 CGTGGTGCCTCTTGGCGGAGAGTGTGGCTGCTTCTGTGCTATCAACGCGCAACAGGAGACAGCGGGCGAAGGTGTGTCTATGAGAGC
 TGGCGGGGACAGCTGACGTGACGCTGACCTGACAGAGATGAAGGAAGAGAGTGGGACAGTGTATGGGGAGAGAGAGGTCCACTATC
 CTGGAGAGCTGTTCTGACTCCGCGGCTACCGCGACGCGCATCTCATGCTGTGGTGTGTGATGTGTGCGAGAGCTGTCTGGCATCAAG
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 ACACGGGCTTACCTGTGTGTGTGCTGTTTGGTGTGAGAGAGAGCGCGGCGGCTGCACTCATAGGCTCTGGCTGGCATGTGGC
 GGTTGTGCCATACCTGACCATACGCTGTAGCAGCTGTGGAGCAGCTACCCATGGATGCTGACCTGACCTATGAGCATCTGTGGCATTTGG
 CTCTTGTGGCTTCTTTGAATTTGGGTCTGGGCGCATCCCATGTGTCATCTGTGGCTGAACCTTTGAGCGAGGCTCCAGCTCCAGCTG
 CCATTGGCTTTGACGGCTGTGTCCAACTGGAGCTCCAACTTTTATTGTGGGCGGCTGTGTTCAGATATGTGGAGCAACTGTGTGTGTGCC
 TACGTTCTGATCATCTGACCTGACCTGACCTGTGGTCTGTGTGTTCACTGTGCTACCTACTGTC

eGFP sequence: (SEQ ID NO: 5)

ATGTTGAGCAAGGGCGAGGAGCTGTTACCGGGGTGGTSCCATCTGCTGGAGCTGGACGGCAGCTAAAGGGCCA
CAAGTTCAGCGGTGTCGGGGGAGGGCGAGGGCGATGCCATCTACGGCAAGCTGACCCCTGAAGTTCATCTGCACCAACCG
GCAAGCTGCCCGTGGCTGGCCGACCTCTGGTACCCCTTGACCTTACGGCGTGCAGTGTCTGACCGGTATCCCGGAC
CACATGAGGACGAGCAGCATCTCTCAGTCTCGCGATCGCCGAAGGCTACGTCGAGGAGCGGACCATCTCTTCAAGGA
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TGACTCTCAAGGGAGACGGCAACATCTTGGGGCAGAGCTGGAGTACAACTACAAAGCCGACCAACGCTATATCATG
GCGGCAAGCGAGAGAAAGCGCATCAAGGTGAACTTCAAGATCCGCCACACATCGAGAGCGGACGAGTGCAGCTGCG
CGACCACTACCAAGCAGAACTCCCGCATCGCGACGGCCCGGTGCTGCTGCCGACACCACTACTGTCAGCAACCACT
CCGCGCTGAGCAAGAGCCCAACGAGGAGAGCGGATACATCATGCTGCTGGAGTTCGTGACCGCCGCGCGGATCACT
CTCGGCACTGGACGAGCTGTACAGTAA

FR localization sequence: (SEQ ID NO: 10)

CTGCTGACCAAGGTGAAGGGCTCC

Golgi localization sequence: (SEQ ID NO: 11)

CCCAGACAAGACACTACATCCATCCAAACAAGGAGAGAAACAGCTTCAAAGGAGAGAGATTATTGGTGTG

Figure 9
(Continued)

IRES2 (SEQ ID NO: 6)

CCCCCTCCTCCCTCCCCCCCCCTAACGTTACTGGCCGAAGCCGCTTGGAATAAGGCCGGTG
TGCGTTTGICTATATGTTATTTCCACCATATTGCCGTCTTTGGCAATGTGAGGGCCCGG
AAACCTGGCCCTGTCTTCTTGACGAGCATTCCTAGGGGTCTTTCCCTCTCGCCAAAGGA
ATGCAAGGTCTGTTGAATGTCGTGAAGGAAGCAGTTCCTCTGGAAGCTTCTTGAAAGACAA
ACAACGTCTGTAGCGACCCCTTTCAGGCAGCGGAACCCCCACCTGGCGACAGGTGCCT
CTGCGGCCAAAAGCCACGTGTATAAGATACACCTGCCAAAGCCGGCACAACCCAGTGCC
ACGTTGTGAGTTGGATAGTTGTGGAAAGAGTCAAATGGCTCTCCTCAAGCGTATTCAACA
AGGGGCTGAAGGATGCCAGAAGGTACCCCATTTGTATGGGATCTGATCTGGGGCCTCGG
TACACATGCTTTACATGTGTTTAGTCGAGGTTAAAAAACGTCTAGGCCCCCCGAACCAC
GGGGACGTGGTTTTCCTTTGAAAAACACGATGATAATATGGCCACAACC

Glutamine Synthetase (GS) (SEQ ID NO: 7)

ATGGCCACCTCAGCAAGTTCCTCACTTGAACAAAAACATCAAGCAAATGTACTTGTGCCTG
CCCCAGGGTGAGAAAAGTCCAAGCCATGTATATCTGGGTTGATGGTACTGGAGAAGGACT
GCGCTGCAAAACCCGCACCCTGGACTGTGAGCCCAAGTGTGTAGAAGAGTTACCTGAGT
GGAATTTTGATGGCTCTAGTACCTTTCAGTCTGAGGGCTCCAACAGTGACATGTATCTCA
GCCCTGTTGCCATGTTTCGGGACCCCTTCGCGAGAGATCCCAACAAGCTGGTGTCTGTG
AAGTTTTCAAGTACAACCGGAAGCCTGCAGAGACCAATTTAAGGCACTCGTGTAAACGG
ATAATGGACATGGTGAGCAACCAGCACCCCTGGTTTGAATGGAACAGGAGTATACTCT
GATGGGAACAGATGGGCACCCCTTTTGGTTGGCCTTCCAATGGCTTTCCTGGGCCCCAAGG
TCCGTATTACTGTGGTGTGGGCGCAGACAAAGCCTATGGCAGGGATATCGTGGAGGCTC
ACTACCGCGCCTGCTTGTATGCTGGGGTCAAGATTACAGGAACAAATGCTGAGGTCATGC
CTGCCCAGTGGGAATTCCAAATAGGACCCTGTGAAGGAATCCGCATGGGAGATCATCTC
TGGGTGGCCCGTTTCACTTGCATCGAGTATGTGAAGACTTTGGGGTAATAGCAACCTTT
GACCCCAAGCCCATTCCTGGGAACTGGAATGGTGCAGGCTGCCATACCAACTTTAGCACC
AAGGCCATGCGGGAGGAGAATGGTCTGAAGCACATCGAGGAGGCCATCGAGAACTAA
GCAAGCGGCACCGGTACCACATTGAGCCTACGATCCCAAGGGGGCCTGGACAATGCC
CGTCGTCTGACTGGGTTCCACGAAACGTCCAACATCAACGACTTTTCTGCTGGTGTGCC
AATCGCAGTGCCAGCATCTGCATTCCCCGGACTGTGCGCCAGGAGAAGAAAGGTTACTTT
GAAGACCGCCGCCCTCTGCCAATTGTGACCCCTTTGCAGTGACAGAAGCCATCGTCCGC
ACATGCCTTCTCAATGAGACTGGCGACGAGCCCTTCCAATACAAAACTAA

Figure 9 (continued)

39/39

Bleomycin resistance protein (BleoR) (SEQ ID NO: 8)

ATGGCCAAGTTGACCAAGTGCCGTTCCGGTGCTACCCGCGCGCGACGTCGCCGGAGCGGT
CGAGTTCTGGACCGACCGGCTCGGGTTCTCCCGGGACTTCGTGGAGGACGACTTCGCCGG
TGTGGTCCCGGACGACGTGACCCTGTTCAACAGCGCGGTCCAGGACCAGGTGGTCCCGG
ACAACACCCTGGCCTGGGTGTGGGTGCGCGGCCTGGACGAGCTGTACGCCGAGTGGTTCG
GAGGTGCTGTCCACGAACCTCCGGGACGCTCCGGGCCGGCCATGACCGAGATCGGCCGA
GCAGCCGTGGGGCGGGAGTTCGCCCTGCGCGACCCGGCCGGCAACTGCGTGCACTTCG
TGGCCGAGGAGCAGGACTGA

Figure 9 (continued)