Claims

1. A metabolically engineered cell producing a mixture of at least three different oligosaccharides, wherein said cell:
   - is metabolically engineered for the production of said mixture,
   - is capable to express, preferably expresses at least two glycosyltransferases, and
   - is capable to synthesize one or more nucleotide-sugar(s), wherein said nucleotide-sugar(s) is/are donor(s) for said glycosyltransferase.
2. Cell according to claim 1, wherein said mixture comprises at least four, preferably at least five, more preferably at least six, even more preferably at least seven, even more preferably at least eight, even more preferably at least nine, most preferably at least ten, different oligosaccharides.
3. Cell according to claim 1 or 2, wherein the relative abundance of each oligosaccharide in the mixture is at least 3%, preferably at least 5%, more preferably at least 10%.
4. Cell according to any one of claims 1 to 3, wherein at least one, preferably more than one, of said oligosaccharides is a mammalian milk oligosaccharide (MMO).
5. Cell according to any one of claims 1 to 4, wherein said cell is capable to express, preferably expresses, at least three, preferably at least four, more preferably at least five, most preferably at least six, glycosyltransferases.
6. Cell according to any one of claims 1 to 5, wherein the cell is modified in the expression or activity of at least one of said glycosyltransferases.
7. A cell according to any one of claims 1 to 6, wherein:
   - one of said glycosyltransferases is a sialyltransferase and one of said donor nucleotide-sugars is CMP-N-acetylneuraminic acid; and/or
   - one of said glycosyltransferases is a fucosyltransferase and one of said donor nucleotide-sugars is GDP-fucose; and/or
   - one of said glycosyltransferases is an N-acetylglucosaminyltransferase and one of said donor nucleotide-sugars is UDP-N-acetylglucosamine; and/or
   - one of said glycosyltransferases is a galactosyltransferase and one of said donor nucleotide-sugars is UDP-galactose; and/or
   - one of said glycosyltransferases is an N-acetylgalactosaminyltransferase and one of said donor nucleotide-sugars is UDP-N-acetylgalactosamine; and/or
   - one of said glycosyltransferases is an N-acetylmannosaminyltransferase and one of said donor nucleotide-sugars is UDP-N-acetylmannosamine.

8. Cell according to any one of claims 1 to 7, wherein said oligosaccharides are produced intracellularly.
9. Cell according to any one of claims 1 to 8, wherein said mixture is composed of charged and neutral oligosaccharides.
10. Cell according to any one of claims 1 to 8, wherein said mixture is composed essentially of at least three, preferably at least four, more preferably at least five, even more preferably at least six, most preferably at least seven, neutral oligosaccharides and no charged oligosaccharides.
11. Cell according to claim 10, wherein said neutral oligosaccharides comprises at least one, preferably at least two, more preferably at least three, even more preferably at least four, even more preferably at least five, even more preferably at least six, most preferably at least seven, different neutral non-fucosylated oligosaccharides.
12. Cell according to claim 10 or 11, wherein said neutral oligosaccharides comprises at least one, preferably at least two, more preferably at least three, even more preferably at least four, even more preferably at least five, even more preferably at least six, most preferably at least seven, different neutral fucosylated oligosaccharides.
13. Cell according to any one of claims 1 to 8, wherein said mixture comprises at least three, preferably at least four, more preferably at least five, even more preferably at least six, most preferably at least seven, charged oligosaccharides and no neutral oligosaccharides.
14. Cell according to any one of claims 1 to 9 and 13, wherein said mixture comprises at least one sialylated oligosaccharide.
15. Cell according to claim 9, 13 or 14, wherein all said charged oligosaccharides are sialylated oligosaccharides.
16. Cell according to any one of claims 9, 13, 14 and 15, wherein the relative abundance of said charged oligosaccharides in said mixture is at least 5%, preferably at least 7%, more preferably at least 10%.
17. Cell according to any one of claims 9 and 13 to 16, wherein the relative abundance of said charged oligosaccharides in said mixture is less than 20%, preferably less than 15%.
18. Cell according to any one of claims 1 to 17, wherein the relative abundance of fucosylated oligosaccharides in said mixture is at least 10%, preferably at least 20%, more preferably at least 30%, even more preferably at least 35%, even more preferably at least 40%, most preferably at least 50%
19. Cell according to any one of claims 1 to 18, wherein the relative abundance of fucosylated oligosaccharides in said mixture is less than 90%, preferably less than 80%, more preferably less than 70%, even more preferably less than 60%, most preferably less than 55%.

20. Cell according to any claim 9, wherein the relative abundance of fucosylated oligosaccharides in the neutral oligosaccharides fraction of said mixture is 10-60%, preferably 20-60%, more preferably 30-60%, even more preferably 30-50%, most preferably 35-50%.
21. Cell according to any one of claims 1 to 20, wherein said cell is a bacterium, fungus, yeast, a plant cell, an animal cell, or a protozoan cell, preferably a bacterium, more preferably an *Escherichia coli* strain.
22. A method to produce a mixture of at least three different oligosaccharides by a cell, preferably a single cell, the method comprising the steps of:
    i) providing a cell which is capable to express, preferably expressing at least two glycosyltransferases and capable to synthesize one or more nucleotide-sugar(s), wherein said nucleotide-sugar(s) is/are donor(s) for said glycosyltransferases, and
    ii) cultivating said cell under conditions permissive to express said glycosyltransferases and to synthesize said nucleotide-sugar(s),
    iii) preferably, separating at least one of said oligosaccharides from said cultivation,

    optionally further comprising purification of any one of said oligosaccharides from said cultivation.
23. Method according to claim 22, wherein said mixture is composed of charged and neutral oligosaccharides.
24. Method according to claim 22, wherein said mixture is composed essentially of at least three, preferably at least four, more preferably at least five, even more preferably at least six, most preferably at least seven, neutral oligosaccharides and no charged oligosaccharides.
25. Method according to claim 24, wherein said neutral oligosaccharides comprises at least one, preferably at least two, more preferably at least three, even more preferably at least four, even more preferably at least five, even more preferably at least six, most preferably at least seven, different neutral non-fucosylated oligosaccharides.
26. Method according to claim 24 or 25, wherein said neutral oligosaccharides comprises at least one, preferably at least two, more preferably at least three, even more preferably at least four, even more preferably at least five, even more preferably at least six, most preferably at least seven, different neutral fucosylated oligosaccharides.
27. Method according to claim 22, wherein said mixture comprises at least three, preferably at least four, more preferably at least five, even more preferably at least six, most preferably at least seven, charged oligosaccharides and no neutral oligosaccharides.
28. Method according to any one of claims 22 to 27, wherein said cell is a metabolically engineered cell according to any one of claims 1 to 21.

29. Use of a cell according to any one of claims 1 to 21 for the production of a mixture of at least three different oligosaccharides.