

CLAIMS

1. An anti α -synuclein antibody having monogalactosylated (G1) and digalactosylated (G2) glycans, the anti α -synuclein antibody comprising a heavy chain variable domain (VH) comprising
 - (a) CDR-H1 comprising the amino acid sequence of SEQ ID NO: 10,
 - (b) CDR-H2 comprising the amino acid sequence of SEQ ID NO: 11, and
 - (c) CDR-H3 comprising the amino acid sequence of SEQ ID NO: 12; anda light chain variable domain (VL) comprising
 - (d) CDR-L1 comprising the amino acid sequence of SEQ ID NO: 13,
 - (e) CDR-L2 comprising the amino acid sequence of SEQ ID NO: 14, and
 - (f) CDR-L3 comprising the amino acid sequence of SEQ ID NO: 15; andwherein the anti α -synuclein antibody has 17.2-48.0% (w/w) of G1 and 3.1-15.0% (w/w) of G2 per total glycan; preferably 25.4-48.0% (w/w) of G1 and 3.5-15.0% (w/w) of G2 per total glycan; preferably 27.2-47.0% of G1 and 4.4 to 15.0% of G2 per total glycan; preferably 40.0-46.0% (w/w) of G1 and 8.4-15.0% (w/w) of G2 per total glycan; more preferably 41.0-45.0% (w/w) of G1 and 9.5-14.0% (w/w) of G2 per total glycan and most preferably 42.1-43.9% (w/w) of G1 and 10.6-13.3% (w/w) of G2 per total glycan.
2. The α -synuclein antibody of claim 1, wherein the anti α -synuclein antibody comprises
 - (a) a VH sequence of SEQ ID NO: 16;
 - (b) a VL sequence of SEQ ID NO: 17; or
 - (c) the VH sequence as defined in (a) and the VL sequence as defined in (b)
3. The anti α -synuclein antibody of claim 1 or 2, wherein the anti α -synuclein antibody comprises a heavy chain of SEQ ID NO: 20 and a light chain of SEQ ID NO: 21.
4. An anti-CD20/anti-CD3 bispecific antibody having monogalactosylated (G1) and digalactosylated (G2) glycans, the anti-CD20/anti-CD3 bispecific antibody comprising

a first antigen binding domain, and a second antigen binding domain, wherein the first antigen binding domain comprises a heavy chain variable domain (VH) comprising

- (a) CDR-H1 comprising the amino acid sequence of SEQ ID NO: 22,
 - (b) CDR-H2 comprising the amino acid sequence of SEQ ID NO: 23, and
 - (c) CDR-H3 comprising the amino acid sequence of SEQ ID NO: 24; and
- a light chain variable domain (VL) comprising
- (d) CDR-L1 comprising the amino acid sequence of SEQ ID NO: 25,
 - (e) CDR-L2 comprising the amino acid sequence of SEQ ID NO: 26, and
 - (f) CDR-L3 comprising the amino acid sequence of SEQ ID NO: 27;

wherein the second antigen binding domain comprises a heavy chain variable domain (VH) comprising

- (a) CDR-H1 comprising the amino acid sequence of SEQ ID NO: 34,
 - (b) CDR-H2 comprising the amino acid sequence of SEQ ID NO: 35, and
 - (c) CDR-H3 comprising the amino acid sequence of SEQ ID NO: 36; and
- a light chain variable domain (VL) comprising
- (d) CDR-L1 comprising the amino acid sequence of SEQ ID NO: 37,
 - (e) CDR-L2 comprising the amino acid sequence of SEQ ID NO: 38, and
 - (f) CDR-L3 comprising the amino acid sequence of SEQ ID NO: 39; and

wherein the anti-CD20/anti-CD3 bispecific antibody has 19.0-29.0% (w/w) of G1 and 1.3-2.8% (w/w) of G2 per total glycan; preferably 20.0-28.0% (w/w) of G1 and 1.4-2.7% (w/w) of G2 per total glycan; more preferably 21.0-28.0% (w/w) of G1 and 1.5-2.7% (w/w) of G2 per total glycan and most preferably 21.0-27.4% (w/w) of G1 and 1.5-2.6% (w/w) of G2 per total glycan.

5. The anti-CD20/anti-CD3 bispecific antibody of claim 4, wherein
 - (a) the first antigen binding domain comprises a VH sequence of SEQ ID NO: 28 and a VL sequence of SEQ ID NO: 29;
 - (b) the second antigen binding domain comprises a VH sequence of SEQ ID NO: 40 and a VL sequence of SEQ ID NO: 41; or
 - (c) the first and second antigen binding domain comprises a VH sequence as defined in (a) and a VL sequence as defined in (b).
6. The anti-CD20/anti-CD3 bispecific antibody of any of claims 4 or 5, wherein the anti-CD20/anti-CD3 bispecific antibody comprises

- (a) a first heavy chain of SEQ ID NO: 46 and a second heavy chain of SEQ ID NO: 45;
 - (b) a first light chain of SEQ ID NO: 33 and a second light chain of SEQ ID NO: 44; or
 - (c) the first heavy chain and the second heavy chain as defined in (a) and the first light chain and the second light chain as defined in (b).
7. The anti-CD20/anti-CD3 bispecific antibody of any of claims 4 to 6, wherein the anti-CD20/anti-CD3 bispecific antibody comprises
- (a) a first heavy chain of SEQ ID NO: 47 and a second heavy chain of SEQ ID NO: 45;
 - (b) a first light chain of SEQ ID NO: 33, a second light chain and a third light chain of SEQ ID NO: 44; or
 - (c) the first heavy chain and the second heavy chain as defined in (a) and the first light chain, the second light chain and the third light chain as defined in (b).
8. A method of producing a α -synuclein antibody of any of claims 1 to 3 having monogalactosylated (G1) and digalactosylated (G2) glycans, said method comprising:
- (a) cultivating a mammalian cell in a cell culture medium, wherein a concentration of at least more than 4.0 and less than 10.0 mM of sulfhydryl group(s) from one or more sulfhydryl compound(s) and at least more than 3.0 g/L glucose in the cell culture medium is maintained for at least 3, more preferably for at least 4 and even more preferably for at least 5 days,
 - (b) isolating said antibody.
9. A method of producing an anti-CD20/anti-CD3 bispecific antibody of any of claims 4 to 7 having monogalactosylated (G1) and digalactosylated (G2) glycans, said method comprising:
- (a) cultivating a mammalian cell in a cell culture medium, wherein a concentration of at least more than 4.0 and less than 10.0 mM of sulfhydryl group(s) from one or more sulfhydryl compound(s) and at least more than 3.0 g/L glucose in the cell culture medium is maintained for at least 3, more preferably for at least 4 and even more preferably for at least 5 days,
 - (b) isolating said antibody.

10. The method of claim 8 or 9, wherein the concentration is maintained for at least 5 days, preferably for at least 7 days, more preferably for at least 10 days, even more preferably for at least 12 days and most preferably for at least 14 days.
11. The method of any of claims 8 to 10, wherein the cell culture medium comprises a concentration of at least 5.0 mM and less than 10.0 mM, preferably at least 5.0 mM and equal or less than 9.0 mM, more preferably at least 5.0 mM and equal or less than 8.0 mM, even more preferably at least 5.0 mM and equal or less than 7.0 mM and most preferably at least 5.0 mM and equal or less than 6.0 mM of the sulfhydryl group(s) from the one or more sulfhydryl compound(s).
12. The method of any of claims 8 to 11, wherein the cell culture medium comprises between more than 3.0 g/L and at most 13 g/L glucose, preferably between more than 3.0 g/L and at most 8.0 g/L glucose, more preferably between more than 3.0 g/L and at most 7.0 g/L glucose, even more preferably between more than 3.0 g/L and at most 6.0 g/L glucose and most preferably between more than 3.0 g/L and at most 5.0 g/L glucose.
13. The method of any of claims 8 to 12, wherein the one or more sulfhydryl compound(s) are selected from the group consisting of cysteine, cystine, and a combination thereof.
14. The method of any of claims 8 to 13, wherein the cell culture medium is a chemically defined medium, preferably a serum-free, protein-free and/or oligopeptide-free cell culture medium.
15. The anti-CD20/anti-CD3 bispecific antibody of any of claims 1 to 4 for use in the treatment of patients with B-cell associated cancers, preferably chronic leukemia and lymphoma.
16. The α -synuclein antibody of any of claims 5 to 7 for use in the treatment of patients with Parkinson's disease.