CLAIMS

1. A method for purifying a clostridial neurotoxin comprising:
   (a) contacting a cation exchange resin with a composition comprising a clostridial neurotoxin, wherein the contacting step is performed in a buffer with a pH higher than -1 pH unit below the calculated pI of the clostridial neurotoxin, wherein said step of contacting a cation exchange resin with a composition comprising said clostridial neurotoxin occurs prior to conversion of said clostridial neurotoxin from a single-chain form into a di-chain form;
   (b) separating the clostridial neurotoxin from the cation exchange resin; and
   (c) recovering the single-chain clostridial neurotoxin.

2. A method according to claim 1, wherein the separated clostridial neurotoxin is in a substantially pure state.

3. A purification intermediate comprising a clostridial neurotoxin associated with a cation exchange resin, wherein the purification intermediate has a pH value of at least pH 6.5, preferably at least pH 7.3, and wherein the cation exchange resin is contacted with said clostridial neurotoxin prior to conversion of said clostridial neurotoxin from a single-chain form into a di-chain form.

4. A method or purification intermediate according to any one of the preceding claims, wherein the pH value is:
   (a) at least about pH 6.5;
   (b) at least about pH 7.5, preferably about pH 7.6, more preferably at least about pH 7.7, even more preferably about pH 7.8;
   (c) between about pH 7.3 to about pH 9.5; or
   (d) between about pH 7.3 to about pH 8.0.

5. Use of a buffer having a pH value that is higher than -1 pH unit below than the calculated pI of a single-chain clostridial neurotoxin for contacting a composition comprising the clostridial neurotoxin with a cation exchange resin prior to conversion of said single-chain form into a di-chain form for increased binding and/or yield of the single-chain clostridial neurotoxin, when compared to using a pH value that is more than -1 pH units below than the calculated pI of said clostridial neurotoxin under identical conditions.

6. A use according to claim 5, wherein the pH value is:
   (a) at least about pH 6.5;
   (b) at least the calculated pI of said clostridial neurotoxin, preferably at least about 0.2 pH units above, more preferably at least 0.5 pH units above the calculated pI of said clostridial neurotoxin;
   (c) between about 0.2 to about 1.5 pH units above the calculated pI of said clostridial neurotoxin; or
   (d) between about 0.2 to about 1.0 pH units above the calculated pI of said clostridial neurotoxin.

7. A method or use, according to any one of claims 1, 2 or 4-6, wherein contacting a cation exchange resin with a composition comprising a clostridial neurotoxin is a first purification step (e.g. a first chromatographic purification step).

8. A method or use, according to any one of claims 1, 2 or 4-6, wherein the purification comprises one or more additional step(s).

9. A method or use according to claim 8, wherein the one or more additional step(s) comprises contacting the composition comprising a clostridial neurotoxin with one or more additional resins, and optionally wherein:
   (a) contacting with one or more additional resins is carried out after the step of contacting the cation exchange resin with the composition comprising the clostridial neurotoxin; and/or
   (b) the one or more additional step (s) is selected from the group consisting of anion exchange chromatography, cation exchange chromatography, hydrophobic interaction chromatography, mixed-mode chromatography, hydrophobic charge-induction chromatography, gel filtration chromatography and affinity chromatography;
   wherein preferably the method comprises the additional step of anion exchange chromatography after the step of contacting the cation exchange resin with the composition comprising the clostridial neurotoxin.

10. A method or use according to claim 8 or 9, wherein the one or more additional step(s) comprises converting the botulinum neurotoxin from a single-chain form into a di-chain form following recovery of the single-chain clostridial neurotoxin.

11. A method or use according to any one of claims 1, 2 or 4-10, wherein at least 35% (preferably at least 40%, 50% 60%, 70% or 80%) of the total clostridial neurotoxin comprised in the composition associates with the cation exchange resin.

12. A method, use, clostridial neurotoxin or purification intermediate according to any one of the preceding claims, wherein the clostridial neurotoxin is one or more selected from the group consisting of: *Clostridia botulinum, Clostridia tetani*, *Clostridia baratii* and *C. butyricum*.

13. A method, use, clostridial neurotoxin or purification intermediate according to any one of the preceding claims, wherein the clostridial neurotoxin is a botulinum neurotoxin (BoNT), preferably one or more BoNT(s) selected from the group consisting of: BoNT/A, BoNT/B, BoNT/C_1, BoNT/D, BoNT/E, BoNT/F and BoNT/G, more preferably wherein the BoNT is a cationic BoNT.