Claims

1. A method for purifying recombinant granulocyte colony-stimulating factor (G-CSF), comprising at least one cation exchange chromatography and at least one hydrophobic interaction chromatography, wherein these chromatography steps follow immediately upon each other in any order.

2. Method of claim 1, comprising two cation exchange chromatographies, each of which is carried out before and after the hydrophobic interaction chromatography.

3. Method of claim 1 or 2 further comprising a cross-flow filtration subsequent to the final cation exchange chromatography.

4. Method according to any of the preceding claims, wherein no anion exchange chromatography is carried out.

5. Method according to any of the preceding claims, wherein no gel filtration is carried out.

6. Method according to any of the preceding claims, wherein no HPLC is carried out.

7. Method according to any of the preceding claims, wherein no affinity chromatography is carried out.

8. Method according to any of the preceding claims, wherein no hydroxyapatite chromatography is carried out.

9. Method according to any of the preceding claims, wherein a sulfopropylmatrix is used for cation exchange chromatography.

10. Method according to any of the preceding claims, wherein phenyl groups are used as hydrophobic ligands for hydrophobic interaction chromatography.

11. Method for the production of a pharmaceutical preparation, comprising recombinant G-CSF and pharmaceutically acceptable additives such as buffers, salts and stabilizers, comprising a method for purifying G-CSF according to any of the preceding claims.

Claims

1. Method for purifying recombinant granulocyte colony-stimulating factor (G-CSF), comprising at least one cation exchange chromatography and at least one hydrophobic interaction chromatography, wherein these chromatography steps follow each other immediately in any order, wherein refolded G-CSF is used as starting material for the chromatographic purification and the folding preparation is subjected to depth filtration prior to the first chromatography step.

2. Method of Claim 1, comprising two cation exchange chromatographies, each of which is carried out before and after the hydrophobic interaction chromatography.

3. Method of Claim 1 or 2 further comprising a cross flow filtration subsequent to the final cation exchange chromatography.

4. Method according to any of the preceding claims, wherein no anion exchange chromatography is carried out.

5. Method according to any of the preceding claims, wherein no gel filtration is carried out.

6. Method according to any of the preceding claims, wherein no HPLC is carried out.

7. Method according to any of the preceding claims, wherein no affinity chromatography is carried out.

8. Method according to any of the preceding claims, wherein no hydroxyapatite chromatography is carried out.

9. Method according to any of the preceding claims, wherein a sulfopropylmatrix is used for cation exchange chromatography.

10. Method according to any of the preceding claims, wherein phenyl groups are used as hydrophobic ligands for the hydrophobic interaction chromatography.

11. Method for the production of a pharmaceutical preparation, comprising recombinant G-CSF and pharmaceutically acceptable additives like buffers, salts and stabilizers, comprising a method for purifying G-CSF according to any of the preceding claims.