Patent Claims

1. A method for the recombinant production of a polypeptide in a eukaryotic cell comprising the steps of:

   - cultivating a eukaryotic cell comprising a nucleic acid encoding the polypeptide in a cultivation medium comprising a compound selected from the group consisting of trans-2-methyl 2-pentenoic acid, the broad-spectrum histone deacetylase (HDAC) inhibitor Quisinostat, and the subtype-specific HDAC inhibitor Romidepsin, and

   - recovering the polypeptide from the cell or the cultivation medium and thereby producing the polypeptide in a eukaryotic cell.

2. A method for the recombinant production of a polypeptide in a eukaryotic cell comprising the steps of:

   - cultivating a eukaryotic cell comprising a nucleic acid encoding the polypeptide in a cultivation medium comprising a first and a second compound, wherein said first compound is a subtype-specific HDAC inhibitor selected from the group consisting of an HDAC-1 inhibitor, an HDAC-2 inhibitor and an HDAC-3 inhibitor, and said second compound is a canonical or non-canonical nuclear factor kappa-light-chain-enhancer of activated B cells (NFκB) activator selected from the group consisting of Tumor necrosis factor (TNF) alpha, ligands of interleukin-1/Toll-like receptor (IL-1R/TLR), lipopolysaccharides, interleukin-1beta (IL-1b) epidermal growth factor (EGF), phorbol myristate acetate (PMA) and betulinic acid, and

   - recovering the polypeptide from the cell or the cultivation medium and thereby producing the polypeptide in a eukaryotic cell.

3. The method according to claim 2, wherein the subtype-specific HDAC inhibitor is selected from the group consisting of pimelic diphenylamide 106, Apicidin, and Romidepsin.

4. The method according to any one of claims 1 to 3, wherein the compound or the first compound is added of from one hour to five hours after transfection of the cells.

5. The method according to claim 4, wherein the compound or the first compound is added about three hours after the transfection of the cells to the cultivation.

6. The method according to any one of claims 2 to 5, wherein the second compound is added from twenty-one hours to thirty hours after the transfection of the cells to the cultivation.

7. The method according to claim 6, wherein the second compound is added about twenty-four to twenty-seven hours after the transfection of the cells to the cultivation.

8. The method according to claim 1, wherein trans-2-methyl 2-pentenoic acid is added to a final concentration in the cultivation medium of about 6-7 mM.

9. The method according to any one of claims 4 to 7, wherein Flagellin is added to a final a concentration of 2 ng/mL and Romidepsin is added to a final concentration of 15 nM.

10. The method according to any one of claims 1 to 9, wherein the polypeptide is an antibody.

11. The method according to any one of claims 1 to 10, wherein the eukaryotic cell is a Chinese hamster ovary (CHO) cell or a human embryonic kidney (HEK) cell.