Claims

1. A method for increasing the level of glutathione in reduced state (GSH) in mammalian cells in a bioreactor comprising adding to said cells S-sulfocysteine and/or a S-sulfocysteine salt in an amount effective to increase the intracellular glutathione level, whereby the level of glutathione is increased by at least 10% for more than half of the time of the cell culture compared to a cell culture under equivalent conditions but without the addition of S-sulfocysteine and/or its salts.

2. The method according to claim 1 characterized in that the method is performed by culturing said cells in a liquid cell culture medium and adding to the cell culture medium at one or more points in time in the course of the culture S-sulfocysteine and/or a S-sulfo-cysteine salt in an amount effective to increase the intracellular glutathione level of the cells in culture.

3. The method according to claim 1 or claim 2, characterized in that (S)-2-amino-3-sulfo-sulfanylpropanoic acid sodium salt is added.

4. The method according to one or more of claims 1 to 3, characterized in that the cell culture medium has a pH of between 6.8 and 7.5.

5. The method according to one or more of claims 1 to 4, characterized in that S-sulfocysteine and/or a S-sulfocysteine salt are added in an amount so that their concentration in the cell culture is between 0.4 and 50 mM.

6. The method according to one or more of claims 1 to 5, characterized in that the cells are cultured in a cell culture medium comprising at least one or more saccharide components, one or more amino acids, one or more vitamins or vitamin precursors, one or more salts, one or more buffer components, one or more co-factors and one or more nucleic acid components.

7. The method according to one or more of claims 1 to 6, characterized in that the method is performed by:

a) providing a bioreactor;

b) mixing the cells to be cultured with a cell culture medium comprising S-sulfocysteine and/or a S-sulfocysteine salt; and

c) incubating the mixture of step b).

8. The method according to one or more of claims 1 to 6, characterized in that the method is performed by

a) filling into a bioreactor cells and a liquid cell culture medium

b) incubating the cells in the bioreactor; and

c) continuously over whole time of the incubation of the cells in the bioreactor or once or several times within said incubation time adding a feed medium to the bioreactor,

whereby the feed medium comprises S-sulfocysteine and/or a S-sulfocysteine salt.

9. The method according to claim 8, characterized in that the feed medium comprises S-sulfocysteine and/or a S-sulfocysteine salt in a concentration between 1 and 100 mmol/l.

10. The method according to one or more of claims 1 to 8, characterized in that the level of glutathione is increased by more than 25% for more than half of the time of the cell culture compared to a cell culture without the addition of S-sulfocysteine and/or its salts.