culture medium for eukaryotic cells (Non Patent Literature 1) and VB12 is a component essential for culturing mammal cells (Patent Document 1).

CITATION LIST

PATENT LITERATURE

[0007] Patent Literature 1: WO 2018/208743

Patent Literature 2: Japanese Translation of PCT International Application Publication No. 2015-515281

NON PATENT LITERATURE

[0008] Non Patent Literature 1: MAbs. 2013 Nov 1; 5(6): 974-981

Non Patent Literature 2: MAbs. 2014 May 1; 6(3): 679-688

Non Patent Literature 3: Biotechnology and Bioengineering. 2018;115: 900-909

SUMMARY

[0008a] In one aspect, the present disclosure provides a method for producing a composition containing a polypeptide with suppressed coloring, the method comprising the steps of: a) culturing eukaryotic cells containing a nucleic acid encoding a polypeptide in a cell culture medium free of vitamin B12; and b) collecting a composition containing the polypeptide from the culture.

[0008b] In another aspect, the present disclosure provides a method for producing a composition containing an antibody with suppressed coloring, the method comprising the steps of: a) identifying an antibody of interest as an antibody containing a modification of at least one amino acid residue selected from amino acid residues at positions 214, 234, 238, 250, 264, 307, 311, 330, 343, 428, 434, 436, 438 and 440 according to EU numbering in the Fc region; b) selecting a cell culture medium free of vitamin B12 for the antibody containing a modification of the amino acid residue; c) culturing eukaryotic cells containing a nucleic acid encoding the antibody containing a modification of the amino acid residue in the cell culture medium selected in step b); and d) collecting a composition containing the antibody from the culture.

TECHNICAL PROBLEM

[0009] An object of the present invention is to provide a method for solving the coloring problem while maintaining the amount produced and the physical properties of polypeptides within acceptable ranges by modification of a relatively simple production method for polypeptides having a property that easily causes coloring.

SOLUTION TO PROBLEM

[0010] The present inventors have extensively conducted studies for achieving the above-described object, and resultantly found that use of a culture medium free of VB12 enables suppression of coloring while maintaining the amount of polypeptides produced.

[0011] Accordingly, the present invention can be described as the following (1) to (17).

(1) A method for producing a composition containing a polypeptide with suppressed coloring, the method comprising the steps of (a) culturing eukaryotic cells containing a nucleic acid encoding a polypeptide in a cell culture medium free of vitamin B12; and (b) collecting a composition containing the polypeptide from the culture.

(2) The method for producing a composition according to (1), wherein the molar concentration ratio of vitamin B12 to the polypeptide is less than 0.26%.