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(54) **Title:** METHODS OF ADJUSTING THE PH OF A CELL CULTURE MEDIUM

(57) **Abstract:** Methods for adjusting the pH of a cell culture medium, methods for culturing cells in a pH-adjusted cell culture medium, and methods for making a polypeptide expressed by cells cultured in a pH-adjusted cell culture medium are described. Also described are systems for determining how much acid or base should be added to a cell culture medium to obtain a desired pH. The methods include a charge balance model that includes parameters for a functional relationship between a concentration of dissolved carbon dioxide in the cell culture medium, a mole fraction of gaseous carbon dioxide applied to the cell culture medium, a concentration of net medium acids in the cell culture medium, and the desired medium pH.

