to the invention can be immensely reduced by a factor of about 20 to about 50 in comparison to the prior art measurements using aqueous solutions of the respective plant or yeast hydrolysate samples. Therefore, e.g. a small amount of soy hydrolysate powder from a lot can be used as a sample to predict the performance of the whole lot.

Furthermore, these 2D-fluorescence spectroscopy results of a given plant or yeast hydrolysate sample, in particular derived from a plant or yeast hydrolysate lot, could be correlated with manufacturing data of a protein when produced in a cell culture medium comprising an amount of said plant or yeast hydrolysate lot.

A benefit of the invention is also the fact that there is no need to combine various spectral analysis methods as described in the prior art.

SUMMARY ~~OF THE INVENTION~~

In one aspect, the present invention refers to a method of predicting a performance characteristic of a plant or yeast hydrolysate measured in powder form comprising the steps of a) providing a training set comprising a plurality of plant or yeast hydrolysate samples, each sample having a predetermined value of a manufacturing parameter of interest, b) irradiating a sample of said training set with light of a plurality of wavelengths in a predetermined range, c) determining at least one measured value indicative of radiation emitted from the sample, d) repeating steps b) and c) for all samples of said training set, e) performing multivariate data analysis of the at least one measured value determined for each of the plurality of samples and corresponding predetermined manufacturing parameters of interest to obtain model parameters correlating the at least one measured value determined for each of the plurality of samples with the corresponding predetermined manufacturing parameters of interest, f) obtaining information correlated to the manufacturing parameter of interest of a new sample different from the samples of said training set from an at least one measured value indicative of radiation emitted from the sample according to step c) after irradiating said sample according to step b) by using those model parameters obtained in step e), g) obtaining predictive information related to the performance characteristic of the new sample by determining whether said manufacturing parameter of interest falls into a predetermined range. ~~An object of the~~The present ~~invention~~ disclosure describes ~~is to provide~~ a method of predicting a performance characteristic of a plant or yeast hydrolysate, wherein a plant or yeast hydrolysate sample is measured with 2D fluorescence spectroscopy in powder form. Preferably the plant or yeast hydrolysate sample, in particular a soy hydrolysate sample, is an amount of plant or yeast hydrolysate of a commercially purchased lot. Said method comprises the steps for

providing a model based on a predetermined value of a manufacturing parameter of interest.

For this purpose a training set consisting of predetermined manufacturing parameter of interest (e.g volumetric productivity parameter, virus titer or cell number) and fluorescence spectroscopic data is used. The fluorescence spectroscopic data is correlated to the values of the manufacturing parameter of interest to obtain a calibration model/model parameters by applying multivariate data analysis. This calibration model is being used to predict the manufacturing parameter of interest for new samples dedicated for the manufacturing process. This prediction is used for a decision to accept or reject the lot which corresponds to the respective sample for use in the manufacturing process or for further evaluation depending on the pre-defined range of the manufacturing parameter of interest.

In another aspect, the present invention refers to a method for preparing a cell culture medium, comprising the steps of aa) providing a plant or yeast hydrolysate having a high performance characteristic as determined by a method according to claims 1 to 10 and bb) mixing the hydrolysate of step aa) with other cell culture medium components to form the cell culture medium or adding the plant or yeast hydrolysate of step aa) to a basal cell culture medium to form the cell culture medium. In yet another aspect, the present invention refers to a method for cultivating cells, comprising the steps of aa) providing a plant or yeast hydrolysate having a high performance characteristic as determined by a method as disclosed herein, bb) mixing the hydrolysate of step aa) with other cell culture medium components to form the cell culture medium or adding the plant or yeast hydrolysate of step aa) to a basal cell culture medium to form the cell culture medium, cc) providing one or more cells that produce a recombinant target protein, dd) culturing the one or more cells in the plant or yeast hydrolysate supplemented cell culture medium, preferably a basal cell culture medium, to form a cell culture. In a further aspect, the present invention refers to a method for producing a recombinant target protein, comprising the steps of aa) providing a plant or yeast hydrolysate having a high performance characteristic as determined by a method as disclosed herein, bb) mixing the hydrolysate of step aa) with other cell culture medium components to form the cell culture medium or adding the plant or yeast hydrolysate of step aa) to a basal cell culture medium to form a cell culture medium, aa) providing one or more cells that produce a recombinant target protein, ee)culturing the one or more cells in the plant or yeast hydrolysate supplemented cell culture medium, preferably a basal cell medium, such that a recombinant target protein is expressed and excreted from the cells into a culture supernatant, and recovering said target protein. In another aspect, the present invention refers to a method for producing an immunogenic

composition comprising a virus or virus antigen, wherein the method comprises the steps of aa) providing a plant or yeast hydrolysate having a high performance characteristic as determined by a method as disclosed herein and bb)mixing the hydrolysate of step aa) with other cell culture medium components to form the cell culture medium or adding the plant or yeast hydrolysate of step aa) to a basal cell culture medium to form a cell culture medium, ff)providing a culture of cells, gg) infecting the cells with a virus; hh) incubating the infected cells to propagate the virus; jj) harvesting the virus or virus antigen produced; and kk) preparing an immunogenic composition from the harvested virus or virus antigen. In yet another aspect, the present invention refers to use of the method as disclosed herein for preparation of a cell culture medium, preferably an animal protein free cell culture medium, comprising at least one of said plant or yeast hydrolysate having a high performance characteristic as determined by the method as disclosed herein. A further ~~object~~ example ~~of the present invention~~ is ~~to provide~~ a method for preparation of a cell culture medium, preferably an animal protein free cell culture medium, a method for cultivating cells, a method for producing a recombinant target protein, a method for producing an immunogenic composition, whereby the above method of predicting a