What is claimed is:

1. A method of determining a concentration of expressed protein in a fluid comprising:
   measuring a first absorption slope value of the fluid using slope spectroscopy, and dividing said first absorption slope value by a known extinction coefficient of the protein to yield a first concentration;
   depleting the fluid of the expressed protein by selective adsorption;
   measuring a second absorption slope value of the depleted fluid using slope spectroscopy, and dividing the second absorption slope value by the known extinction coefficient of the protein to yield a second concentration; and
   based on the first and second concentrations, calculating an amount of material removed by the selective adsorption.

2. The method of claim 1, with one or more of the following:

- wherein the step of calculating an amount of material removed comprises subtracting the second concentration from the first concentration and multiplying the difference by a volume of the fluid;
- wherein measuring the first and second slope values of the fluid are measured at the same wavelength;
- wherein the calculation of the concentration of expressed protein uses a known extinction coefficient of the expressed protein.

3. The method of claim 1 or 2, wherein depleting the fluid of the expressed protein by selective adsorption further comprises using an affinity ligand to a target protein that has been immobilized on a solid support, preferably wherein the target protein is immobilized Protein A.

4. The method of any of the preceding claims wherein depleting the fluid of the expressed protein by selective adsorption further comprises the use of one or more of the following: resin, a membrane, a filter plate, or a packed column, preferably wherein the resin is dehydrated.

5. The method of any of the preceding claims wherein the step of depleting the fluid does not comprise increasing a fluid volume between the first and second measurements;

and/or

wherein the step of depleting the fluid comprises increasing a fluid volume by a predetermined amount.

6. The method of any of the preceding claims with one or more of the following:

- wherein the steps are automated;
- wherein the fluid is filtered prior to measurement;
- wherein the fluid requires a growth period prior to measurement.

7. A system for determining a level of depletion of expressed protein in a fluid comprising:
a depletion module for depleting the fluid of the expressed protein by selective adsorption;
first and second fluid sampling modules positioned upstream and downstream of the depletion module in a flow path of the fluid; and
a slope spectroscopy apparatus configured to receive fluid from the first and second fluid sampling modules and measure an absorbance of the fluid from the sampling modules at multiple path lengths and determine a fluid concentration therefrom,

wherein the depletion is determined by subtracting a concentration of the expressed protein in fluid from the second module from a concentration of the expressed protein in fluid from the first module and multiplying the difference therebetween by a volume of the fluid.

8. The system of claim 7, wherein the depletion module comprises a chromatography column; and/or wherein the slope spectroscopy apparatus is a slope spectrometer.

9. The system of claim 7 or 8, wherein the method of depleting the fluid of the expressed protein comprises one or more of the following: immobilized Protein A, resin, a membrane, a filter plate, or a packed column.

10. A method of assessing the binding of an expressed protein to a chromatography column in a fluid, comprising the steps of:

(a) taking a first absorbance spectrum of the expressed protein in the fluid at a first pathlength;

(b) changing the first pathlength by an increment to provide a second pathlength and taking a second absorbance spectrum reading at the predetermined wavelength;

(c) depleting the fluid of the expressed protein by selective adsorption;

(d) repeating steps (a) and (b) on the depleted fluid;

(e) generating regression lines from the absorbance values at a given wavelength such that a slope of the regression is obtained for the fluid before and after depletion of the expressed protein;

(f) subtracting the slope of the depleted fluid from the non-depleted fluid slope; and

(g) calculating a percentage of depletion of expressed protein by dividing the quantity calculated in (f) by the slope of the fluid before depletion.

11. The method of claim 10, wherein the calculation of the concentration of expressed protein uses a known extinction coefficient of the expressed protein.

12. The method of claim 10 or 11, wherein depleting the fluid of the expressed protein by selective adsorption further comprises using an affinity ligand to a target protein that has been immobilized on a solid support, preferably wherein the target protein is immobilized Protein A.

13. The method of any of the claims 10-12 wherein depleting the fluid of the expressed protein by selective adsorption further comprises the use of one or more of the following: resin, a membrane, a filter plate, or a packed column, preferably wherein the resin is dehydrated.

14. The method of any of the preceding claims 10-13 with one or more of the following:

- wherein the steps are automated;
- wherein the fluid is filtered prior to measurement;
- wherein the fluid requires a growth period prior to measurement.

15. Use of a system according to any of the claims 7-9 in a method according to any of the claims 1-6, 10-14.