aggregates, wherein a purer state of the desired protein has a reduced aggregate content in comparison with the sample.

[0099] In one or more of each of the preceding embodiments, the aggregates may comprise homo-aggregates of the desired protein.

[00100] In one or more of each of the preceding embodiments, the presence of homo-aggregates of the desired protein in the sample may be substantially eliminated by performing the methods disclosed herein.

[00101] In one or more of each of the preceding embodiments, the aggregates may comprise hetero-aggregates of the desired protein and a contaminant.

[00102] In one or more of each of the preceding embodiments, the hetero-aggregates may be of substantially the same hydrodynamic size as the desired protein.

[00103] In one or more of each of the preceding embodiments, the contaminant may be a nucleic acid, nucleotide, endotoxin, metal ion, protein, lipid, cell culture media component, or combinations thereof.

[00104] In one or more of each of the preceding embodiments, the presence of hetero-aggregates of the desired protein and the contaminant may be substantially eliminated by performing the methods disclosed herein.

[00105] In one or more of each of the preceding embodiments, the sample may contain one or more contaminants wherein the purer state of the desired protein has a reduced content of such contaminants in comparison with the sample as a result of performing the methods disclosed herein.

[00106] Also disclosed herein is a~~A~~ kit ~~may be provided~~ for the convenient practice of a method ~~according to any of the preceding embodiments~~as described herein.

[00107] Although embodiments disclosed herein may be exemplified primarily with reference to IgG type antibodies and their hetero-aggregates, those skilled in the art will appreciate the applicability of various embodiments to the purification of other proteins, such as IgM-type and other antibodies, histone proteins, and beneficially, any other alkaline proteins. These and other advantages will be recognized by those skilled in the art.

BRIEF DESCRIPTION OF THE FIGURES

[00108] Figure 1 shows side-by-side chromatograms of filtered cell culture supernatant (CCS) (left panel) and protein A-purified trastuzumab (right panel) applied to UNOsphere Q at sample volume 35% of column volume with both columns equilibrated to 50 mM Tris, pH 8.0. The solid line indicates UV absorbance. The broken line indicates conductivity.

91. The method of claims 88-90 wherein the presence of hetero-aggregates of the desired protein and a contaminant is substantially eliminated.

92. The methods of claims 1-91 wherein the sample contains one or more contaminants wherein the purer state of the desired protein has a reduced content of such contaminants in comparison with the sample.

91. The method of claims 88-90 wherein the presence of hetero-aggregates of the desired protein and a contaminant is substantially eliminated.

92. The methods of claims 1-91 wherein the sample contains one or more contaminants wherein the purer state of the desired protein has a reduced content of such contaminants in comparison with the sample.

93. A Kit providing for the convenient practice of a method of claims 1-92.