What is claimed is:

1. A method for identifying at least one heterodimer species of a first protein and a second protein in a co-formulated preparation of at least two proteins including said first protein and said second protein, said method comprising:

(a) contacting a sample comprising the co-formulated preparation of at least two proteins, including the heterodimer species, to a chromatographic system having a size-exclusion chromatography resin;

(b) washing said size-exclusion chromatography resin using a mobile phase to provide an eluent including at least one heterodimer species; and

(c) identifying said at least one heterodimer species in said eluent using an electrospray ionization mass spectrometer under native conditions,

wherein said chromatographic system is coupled online to said mass spectrometer to allow fluid communication between said mass spectrometer and said chromatographic column, wherein at least one splitter with at least three paths is used to couple said chromatographic system with said mass spectrometer and with an ultraviolet detector.

2. The method of claim 1, wherein the electrospray ionization mass spectrometer is a nano-electrospray ionization mass spectrometer.

3. The method of claim 1, wherein the eluent from washing the size-exclusion chromatography resin is introduced in the ultraviolet detector through the at least one splitter at a flow rate of from 0.2 mL/min to 0.4 mL/min.

4. The method of claim 1, wherein the mobile phase used to wash the size-exclusion chromatography resin comprises ammonium acetate.

5. The method of claim 1, wherein the mobile phase used to wash the size-exclusion chromatography resin comprises a volatile salt.

6. The method of claim 1, wherein the mobile phase used to wash the size-exclusion chromatography resin has a flow rate of from 0.2 mL/min to 0.4 mL/min.

7. The method of claim 1, wherein an amount of the sample including the dimer species contacted to the chromatography system is from 10 µg to 100 µg.

8. The method of claim 1, wherein the eluent provided from washing the size-exclusion chromatography resin is introduced in the electrospray ionization mass spectrometer, wherein a flow rate of electrospray from the electrospray ionization is from 10 nL/min to 50 nL/min.

9. The method of claim 1, wherein a spray voltage of said electrospray ionization is about 0.8 kV to about 1.5 kV.

10. The method of claim 1, wherein the sample comprises at least two heterodimer species.

11. The method of claim 1, wherein the sample comprises a homodimer species.

12. The method of claim 1, wherein said first protein and said second protein are selected from a group consisting of a therapeutic antibody, a monoclonal antibody, a polyclonal antibody, a bispecific antibody, an antibody fragment, a fusion protein, and combinations thereof.

13. A system comprising:

(a) a chromatographic column having a size-exclusion chromatography resin, wherein the chromatographic column is configured to analyze a sample comprising a co-formulated preparation of at least two proteins, including a heterodimer species, by a size-exclusion chromatography method, and

(b) an electrospray ionization mass spectrometer, wherein the electrospray ionization mass spectrometer is coupled online to said chromatographic column to allow fluid communication between said mass spectrometer and said chromatographic column, and wherein the electrospray ionization mass spectrometer is capable electrospray ionization of a sample in conditions that do not denature proteins in said sample,

wherein at least one splitter with at least three paths is used to couple said chromatographic column with said mass spectrometer and with an ultraviolet detector.

14. The system of claim 13, wherein the electrospray ionization mass spectrometer is a nano-electrospray ionization mass spectrometer.