

We claim:

1. A method for assessing the stoichiometry and size distribution of protein complexes in a sample, comprising:
 - fractionating the sample by asymmetrical flow field flow fractionation (A4F); and
 - determining the molar mass, stoichiometry, and size distribution of the protein complexes in the sample using Multi-Angle Laser Light Scattering (MALLS), wherein the heterogeneous complexes consist of heterogeneous antibody:ligand complexes or heterogeneous fusion protein:ligand complexes.
2. The method of claim 1, wherein the ligand is a soluble ligand.
3. The method of claim 1 or 2, wherein the antibody is a monoclonal antibody or an antigen binding fragment thereof.
4. The method of any one of claims 1-3, wherein the antibody is a bispecific antibody or an antigen binding fragment thereof.
5. A method for selecting a lead protein drug product comprising:
 - adding a first protein drug product to a first sample comprising a target of the first protein drug product to produce heterogeneous protein:ligand complexes;
 - adding a second protein drug product to a second sample containing the same target to form protein:ligand complexes;
 - separating the heterogeneous protein:ligand complexes and determining the size distribution and stoichiometry of heterogeneous protein:ligand complexes using Asymmetrical flow field flow fractionation— Multi-Angle Laser Light Scattering; and
 - selecting the protein drug product that forms fewer protein:ligand complexes as the lead target protein drug.
6. The method of claim 5, wherein the protein drug product that is selected forms fewer protein drug product complexes having a ratio protein drug product to ligand of 3:2, 2:3, 4:4, 6:6, or [2:2]_n.

7. The method of claim 5 or 6, wherein the ligand is a soluble ligand.
8. The method of any one of claims 5-7, wherein the protein drug product is an antibody or antigen binding fragment thereof, a fusion protein, or a recombinant protein.
9. The method of any one of claims 5-7, wherein the protein drug product that is selected forms protein drug product complexes having a protein drug product to ligand ratio selected from the group consisting of 1:0, 0:1, 1:1, 1:2, and 2:1,
10. A pharmaceutical composition comprising the lead protein drug product selected according to any one of claims 5-9.
11. A method for characterizing protein complexes formed between a protein drug product and its ligand comprising:
 - combining the protein drug product and its ligand in a solution to form a sample comprising protein drug product:ligand complexes;
 - fractionating the sample using asymmetrical flow-field flow fractionation; and
 - subjecting the fractionated protein drug product:ligand complexes to multi-angle laser light scattering to characterize the stoichiometry and size of protein drug product:ligand complexes.