CLAIMS

What is claimed is:

1. A process for separating target proteins from non-target proteins, comprising:
   a) obtaining a liquid sample containing target proteins and non-target proteins;
   b) increasing the concentration of the target proteins and non-target proteins in the sample to produce a concentrated feed for delivery to a chromatography device;
   c) delivering the concentrated feed to the chromatography device;
   d) separating the target proteins from the non-target proteins in the chromatography device; and
   e) recovering the target proteins from the chromatography device.

2. The process of Claim 1, wherein the concentration of the target proteins and non-target proteins in the sample is increased using a tangential flow filtration (TFF) process.

3. The process of Claim 2, wherein the TFF process is a single-pass TFF (SPTFF) process, a TFF process operating in single-pass TFF mode where at least a portion of the retentate is recirculated after the first pass through the TFF system or a recirculating TFF process.

4. The process of Claim 1 or Claim 2, wherein the sample is diluted to produce a diluted feed, prior to increasing the concentration of the target proteins and non-target proteins in the sample in step b).

5. The process of Claim 1 or Claim 2 , wherein the target proteins are monoclonal antibodies.

6. The process of Claim 1 or Claim 2 , wherein the non-target proteins are host cell proteins from hybridoma cells expressing the target protein.

7. The process of Claim 1 or Claim 2 , wherein the chromatography device includes 1) an anion-exchange chromatography medium or a hydrophobic interaction

chromatography medium; 2) a size-exclusion chromatography medium; 3) a salt-tolerant membrane adsorber; or 4) an affinity chromatography medium.

8. The process of Claim 1 or Claim 2 , wherein the chromatography device is disposable.

9. A process for increasing the capacity of a chromatography device for a target protein, comprising:
   a) obtaining a liquid sample containing target proteins and non-target proteins;
   b) increasing the concentration of the target proteins and non-target proteins in the sample to produce a concentrated feed for delivery to a chromatography device; and
   c) delivering the concentrated feed to the chromatography device,
   wherein the capacity of the chromatography device for the target protein is increased.

10. The process of Claim 9, wherein the concentration of the target proteins and non-target proteins in the sample is increased using a tangential flow filtration (TFF) process.

11. The process of Claim 10, wherein the TFF process is a single-pass TFF (SPTFF) process, a TFF process operating in single-pass TFF mode where at least a portion of the retentate is recirculated after the first pass through the TFF system or is a recirculating TFF process.

12. The process of Claim 9 or Claim 10, wherein the sample is diluted to produce a diluted feed, prior to increasing the concentration of the target proteins and non-target proteins in the sample in step b).

13. The process of Claim 9 or Claim 10, wherein the target proteins are monoclonal antibodies.

14. The process of Claim 9 or Claim 10, wherein the non-target proteins are host cell proteins from hybridoma cells expressing the target protein.

15. The process of Claim 9 or Claim 10, wherein the chromatography device includes 1) an anion-exchange chromatography medium; 2) a hydrophobic interaction

chromatography medium; 3) a size-exclusion chromatography medium; or 4) a salt-tolerant membrane adsorber.

16. The process of Claim 7, wherein the affinity chromatography medium is a protein A medium, a protein G medium or an immobilized metal ion medium.

17. A process for filtering viruses from a liquid sample, comprising:
    a) obtaining a liquid sample containing viruses;
    b) increasing the protein concentration of the sample to produce a concentrated feed for delivery to a viral filtration device;
    c) delivering the concentrated feed to the viral filtration device; and
    d) removing viruses from the feed in the viral filtration device.

18. The process of Claim 17, wherein the protein concentration of the sample is increased using a tangential flow filtration (TFF) process.

19. The process of Claim 18, wherein the TFF process is a single-pass TFF (SPTFF) process, a TFF process operating in single-pass TFF mode where at least a portion of the the retentate is recirculated after the first pass through the TFF system or a recirculating TFF process.

20. The process of Claim 17 or Claim 18, wherein the viral filtration device includes a flux-limited filter.

21. The process of any one of the preceding claims, further comprising performing continuous diafiltration or discontinuous diafiltration.