Claims

What is claimed is:

1. Method of purifying a biological material of interest in a sample comprising:
    a. providing a sample containing the biological material of interest having a molecular weight equal to or greater than 500 KDa, wherein the biological material of interest is selected from a therapeutic protein, a conjugated polysaccharide vaccine and a virus-like particle;
    b. contacting the sample in tangential filtration (TFF) mode with an electrospun nanofiber membrane composition comprising nylon nanofibers having an average fiber diameter less than 15 nm, thereby resulting in a permeate and a retentate; and
    c. collecting the retentate containing the biological material of interest, thereby purifying the biological material of interest.
2. The method of claim 1, wherein the method results in an increase in the concentration of the biological material of interest.
3. The method of claim 1, wherein the electrospun nanofiber composition exhibits a higher water permeability in TFF mode compared to a solution cast polymeric membrane.
4. The method of claim 1, wherein the electrospun nanofiber membrane composition exhibits a higher flux in TFF mode compared to a solution cast polymeric membrane.
5. The method of claim 1, wherein the collecting step comprises diafiltration.
6. The method of claim 1, wherein the electrospun nanofiber membrane composition is made from Nylon-6.
7. The method of claim 1, wherein the purified biological material of interest has a 90% yield or greater than 90% yield.
8. The method of claim 1, wherein the electrospun nanofiber membrane composition is incorporated into a device suitable for TFF.
9. The method of claim 8, wherein the device is a cassette or a spiral wound device.