What is claimed is:

1. A method for maintaining a narrow residence time distribution of a fluid sample flowing in a fluid channel having an axial length, comprising causing said fluid sample to flow in discrete packets along said axial length within said fluid channel by forming an interface between said discrete packets with a solid material soluble in said fluid.
2. The method of claim 1, wherein said fluid sample has a nominal residence time in said fluid channel of one to two minutes.
3. The method of claim 1, wherein said fluid sample has a nominal residence time in said fluid channel of two to four minutes.
4. The method of claim 1, wherein said fluid sample has a nominal residence time in said fluid channel of four to six minutes.
5. The method of claim 1, wherein said fluid sample has a nominal residence time in said fluid channel of six to eight minutes.
6. The method of claim 1, wherein said fluid sample has a nominal residence time in said fluid channel of eight to ten minutes.
7. The method of claim 1, wherein said fluid sample has a nominal residence time in said fluid channel of ten to fifteen minutes.

8. The method of claim 1, wherein said fluid sample has a nominal residence time in said fluid channel of fifteen to thirty minutes.

9. A method for inactivating one or more viruses in a sample containing a target molecule, wherein the method comprises causing the sample to flow in a flow channel in discrete packets separated by an immiscible fluid while continuously mixing the sample with one or more virus inactivating agents during a process for purifying said target molecule.

10. A method for inactivating one or more viruses in a fluid sample comprising a target molecule, comprising subjecting said fluid sample to a Protein A affinity chromatography process, thereby to obtain an eluate; continuously transferring said eluate to an axial flow channel to mix one or more virus inactivating agents with said eluate; and causing said eluate to flow in said axial channel in discrete packets separated by an immiscible fluid for a time sufficient to inactive said virus.

11. A method for inactivating one or more viruses in a fluid sample comprising a target molecule, comprising subjecting said fluid sample to an ion exchange chromatography process, thereby to obtain an eluate; continuously transferring said eluate to an axial flow channel to mix one or more virus inactivating agents with said eluate; and causing said eluate to flow in said axial

channel in discrete packets separated by an immiscible fluid for a time sufficient to inactive said virus.

12. The method of claim 10, wherein said fluid sample has a nominal residence time in said fluid channel of one to two minutes.
13. The method of claim 10, wherein said fluid sample has a nominal residence time in said fluid channel of two to four minutes.
14. The method of claim 10, wherein said fluid sample has a nominal residence time in said fluid channel of four to six minutes.
15. The method of claim 10, wherein said fluid sample has a nominal residence time in said fluid channel of six to eight minutes.
16. The method of claim 10, wherein said fluid sample has a nominal residence time in said fluid channel of eight to ten minutes.
17. The method of claim 10, wherein said fluid sample has a nominal residence time in said fluid channel of ten to fifteen minutes.
18. The method of claim 10, wherein said fluid sample has a nominal residence time in said fluid channel of fifteen to thirty minutes.
19. The method of claim 10, wherein the target is an antibody or an Fc region containing protein.

20. A fluid channel having an axial length, said fluid channel containing a plurality of discrete packets of fluid sample separated by an immiscible fluid and containing a target molecule and one or more viruses, and containing one or more virus inactivation agents.
21. The method of claim 1, wherein said solid material is a plastic or metal sphere.
22. The method of claim 1, wherein said solid material is selected from a polyolefin, stainless steel, titanium and gold.