CLAIMS

1. An adherent cell culture bioreactor comprising:

a bioreactor container having a wall defining a bioreactor container exterior and a bioreactor container interior, the bioreactor container interior being able to contain a liquid cell culture media and a solid substrate for adherent cell culture,

the wall having a port disposed through it to enable communication between the bioreactor container exterior and the bioreactor container interior,

the port being aseptically connected to a sampling device housing having a sampling device housing exterior and a sampling device housing interior, the sampling device housing disposed on the port so that the sampling device housing interior is in aseptic communication with the bioreactor container interior,

the sampling device housing interior aseptically housing a solid substrate sampling device able to obtain a sample of solid substrate for adherent cell culture contained in the bioreactor container interior.

2. The bioreactor of claim 1, wherein the sampling device is selected from the group consisting of tweezers, forceps, suction device, and a hook.

3. The bioreactor of claim 2, wherein the sampling device housing comprises a tube and the sampling device comprises tweezers.

4. The bioreactor of claim 2, wherein the sampling device housing comprises a bag and the sampling device comprises foreign body forceps.

5. The bioreactor of claim 1, further comprising a magnet disposed on the exterior of the sampling device housing, to manipulate the sampling device disposed in the interior of the sampling device housing.

6. The bioreactor of claim 1, further comprising a membrane disposed between the bioreactor container interior and the sampling device housing interior.

7. The bioreactor of claim 1, wherein the sampling device housing is aseptically detachable from the port.

8. An apparatus for aseptically obtaining a sample of a solid substrate for adherent cell culture contained in the interior of a bioreactor container, the apparatus comprising:

a sampling device housing having a sampling device housing exterior and a sampling device housing interior, the sampling device housing configured to be disposable on the port of an adherent cell culture bioreactor so that the sampling device housing interior is in aseptic communication with the bioreactor container interior via the port,

the sampling device housing interior housing a solid substrate sampling device able to obtain a sample of solid substrate for adherent cell culture contained in the bioreactor container interior.

9. The apparatus of claim 8, wherein the sampling device is selected from the group consisting of tweezers, forceps, suction device and a hook.

10. The apparatus of claim 9, wherein the sampling device housing comprises a tube and the sampling device comprising tweezers.

11. The apparatus of claim 9, wherein the sampling device housing comprises a bag and the sampling device comprises foreign body forceps.

12. A method for aseptically taking a sample of an adherent cell culture substrate, the method comprising:

obtaining the bioreactor of claim 1, the bioreactor container interior aseptically containing liquid cell culture media and a solid substrate for adherent cell culture, and then

using the sampling device to aseptically obtain a sample of the solid substrate for adherent cell culture.

13. A method for aseptically taking a sample of an adherent cell culture substrate, the method comprising:

obtaining the bioreactor of claim 7, the bioreactor container interior aseptically containing liquid cell culture media and a solid substrate for adherent cell culture, and then

using the sampling device aseptically obtain a sample of the solid substrate for adherent cell culture, and then

aseptically detaching the sampling device housing from the port.

14. A method for producing a cell culture product, the method comprising:

obtaining the bioreactor of claim 1, the bioreactor container interior aseptically containing liquid cell culture media and a solid substrate for adherent cell culture, and then

culturing a cell culture in the liquid cell culture media, and then

using the sampling device to aseptically obtain a sample of the solid substrate for adherent cell culture, and then

analyzing the sample to confirm the presence of the cell culture product.

15. A method for producing a cell culture product, the method comprising:

obtaining the bioreactor of claim 7, the bioreactor container interior aseptically containing liquid cell culture media and a solid substrate for adherent cell culture, and then

culturing a cell culture in the liquid cell culture media, and then

using the sampling device to aseptically obtain a sample of the solid substrate for adherent cell culture, and then

analyzing the sample to confirm the presence of the cell culture product.