

Claims:

1. A method of controlling an automated cell engineering system configured to produce a cell culture, the method comprising:
 - establishing, by an automated process control system, a network connection with the automated cell engineering system;
 - receiving, via the network connection, process information from the automated cell engineering system, the process information including one or more of temperature information, pH information, glucose concentration information, oxygen concentration information, component identification information, and optical density information; and
 - providing a control signal to cause the automated cell engineering system to adjust one or more process parameters of the automated cell engineering based on the process information.
2. The method of claim 1, further comprising providing a plurality of additional control signals to a plurality of additional cell engineering systems via a plurality of additional network connections.
3. The method of claim 1, wherein the cell culture is a genetically modified cell culture.
4. The method of claim 1, wherein the cell culture is a genetically modified immune cell culture.
5. The method of claim 1, wherein providing the control signal is performed without user intervention.
6. The method of claim 1, wherein providing the control signal is performed based on user authorization.
7. The method of claim 1, further including receiving production information including cell production information recorded over time, the method further comprising storing, in a database, the production information.
8. The method of claim 1, further comprising monitoring, via the automated process control system, a handshake interrogation procedure performed by the automated cell engineering system responsive to introduction of a cassette.

9. The method of claim 1, wherein the control signal is generated at the automated cell engineering system via operator interaction at the automated cell engineering system.

10. A method of controlling a plurality of automated process control systems via a central control system, the method comprising:

establishing network connections with a plurality of computer systems corresponding to a plurality of automated process control systems, each configured to control a plurality of automated cell engineering systems configured for production of cell cultures;

accessing, by the central control systems, control information history of a first computer system from the plurality of computer systems; and

providing to the first computer system at least one of a cell culture growth protocol update and a cell engineering software update.

11. The method of claim 10, further comprising providing the cell engineering software update to the plurality of computer systems.

12. The method of claim 10, further comprising analyzing the control information history; and modifying local user access to the first computer system based on the analyzing of the control information history.

13. The method of claim 10, further comprising analyzing the control information history to determine local user compliance with best practices or ethical guidelines.

14. A method for automated production of a cell culture performed by an automated cell engineering system, the method comprising:

initiating a cell culture growth protocol within the automated cell engineering system;

monitoring process information of the cell culture growth protocol;

adjusting one or more parameters of the cell culture growth protocol based on the monitoring;

arresting the cell culture growth protocol and recording a stage within the protocol at which the arresting occurred; and

re-initiating the cell culture growth protocol at the stage within the cell culture growth protocol.

15. The method of claim 14, further comprising transferring a cell culture from a first cell engineering system to a second cell engineering system after the arresting and prior to the re-initiating.

16. A method for utilizing excess capacity within a network of automated cell engineering systems configured for automated production of cell cultures, the method comprising:

- receiving, from a plurality of automated process control systems within the network, measures of excess capacity of the automated cell engineering systems;
- determining a capacity requirement according to patient requirements for a cell culture;
- matching the capacity requirement to a selected automated cell engineering system according to the measures of excess capacity; and
- transferring a biological sample to the selected cell engineering system for production of a cell culture.

17. A method for automated production of a cell culture performed by an automated cell engineering system, the method comprising:

- initiating a cell culture growth protocol within the automated cell engineering system;
- receiving, from an authorized user, an updated cell culture delivery requirement; and
- adjusting one or more parameters of the cell culture growth protocol based on the updated cell culture delivery requirement.

18. A method for automated production of a cell culture performed by an automated cell engineering system, the method comprising:

- initiating a cell culture growth protocol within the automated cell engineering system;
- monitoring one or more parameters of the cell culture growth protocol;
- projecting, according to the monitoring, a cell culture delivery date; and
- alerting an authorized user in advance of the cell culture delivery date.