WHAT IS CLAIMED IS:

1. A system for expression, purification, and detection and screening of biological drugs, comprising:

at least one incubator, which is used for culturing biological samples to provide basic samples for the detection and screening of the biological drugs;

a liquid operation system, which is used for implementing predetermined operations on the biological samples cultured in the incubator;

a sample detection platform, which is used for detecting the biological samples to facilitate screening;

a transfer platform, which is used for transferring the biological samples between the incubator and the liquid operation system and/or between the liquid operation system and the sample detection platform; and

an automatic control system, which is configured to control operation of at least one of the incubator, the liquid operation system, the sample detection platform, and the transfer platform.

2. The system for expression, purification, and detection and screening of biological drugs according to claim 1, wherein the transfer platform comprises at least one of a cultured material transfer platform for transferring cultured biological samples between the incubator and the liquid operation system and a test sample transfer platform for transferring biological samples to be detected between the liquid operation system and the sample detection platform.

3. The system for expression, purification, and detection and screening of biological drugs according to claim 2, wherein at least one of the cultured material transfer platform and the test sample transfer platform comprises a robot, and wherein the robot is disposed on any one of a ground guide rail, an air guide rail and

an automatic guided vehicle.

4. The system for expression, purification, and detection and screening of biological drugs according to claim 1, wherein the incubator comprises a housing and a culture assembly accommodated in the housing, and the culture assembly is provided on an automatic sliding table element to enable the culture assembly to slide out of or into the housing in a controlled manner;

wherein the incubator is configured to automatically control temperature and humidity of the biological samples, wherein a temperature inside the incubator is controlled between 16-38℃ and a humidity inside the incubator is controlled between 70-95%; and

wherein the incubator comprises at least one of following items:

a heating film for automatically heating the incubator to control the temperature inside the incubator between 16-38℃;

a humidifying unit, which includes an automatic water supply unit configured to supply water to the incubator in a controlled manner and an atomizer configured to atomize water from the automatic water supply unit to control the humidity in the incubator;

a refrigeration compressor configured to control a temperature of the biological samples between 2-8℃ when sedimentation and enrichment of the biological samples are needed.

5. The system for expression, purification, and detection and screening of biological drugs according to claim 1, wherein the liquid operation system is placed in a controlled laminar flow environment, so that an internal environment of the liquid operation system is isolated from its external environment.

6. The system for expression, purification, and detection and screening of biological drugs according to claim 5, wherein the liquid operation system is

provided with a laminar flow unit configured to form the laminar flow environment in an interior of the liquid operation system by pressure difference; and

wherein the laminar flow unit comprises at least one of following items:

a laminar air-supply unit including a centrifugal fan;

a laminar air-return unit disposed at a bottom of the liquid operation system, wherein the laminar air-return unit comprises a filter screen configured to filter out particulate matters in laminar gases before the laminar gases enter the interior of the liquid operation system.

7. The system for expression, purification, and detection and screening of biological drugs according to claim 1, wherein the liquid operation system comprises a storage compartment, a central operation compartment and at least one liquid operation compartment, wherein the storage compartment is used for storing consumables to support continuous operations of the system for expression, purification, and detection and screening of biological drugs, and the central operation compartment and the liquid operation compartment are used for implementing different operations on the biological samples.

8. The system for expression, purification, and detection and screening of biological drugs according to claim 7, wherein the liquid operation system comprises two liquid operation compartments disposed at two sides of the central operation compartment respectively and configured to be able to perform operation independent of each other as well as perform operation in parallel;

wherein the storage compartment comprises a consumable loading channel and a sample loading channel independent of each other, so as to realize parallel loading of consumables and the biological samples; and

wherein the consumable loading channel and the sample loading channel extend in directions perpendicular to each other respectively.

9. The system for expression, purification, and detection and screening of biological drugs according to claim 8, wherein the consumable loading channel is provided therein with a robot transfer unit including a transfer robot, and wherein the transfer robot is arranged on a slide rail extending along the consumable loading channel and is slidable on the slide rail.

10. The system for expression, purification, and detection and screening of biological drugs according to claim 9, wherein a continuous loading unit is provided in the vicinity of the consumable loading channel, and the continuous loading unit is constructed in the form of a continuous loading turntable to realize continuous loading and unloading of the consumables, and wherein the continuous loading unit comprises an annular transmission element and consumable transfer trays disposed on the annular transmission element, and the transfer robot is configured to transfer the consumables onto the consumable transfer trays and/or transfer the consumables from the consumable transfer trays to other locations;

wherein the storage compartment comprises a plurality of storage drums for storing consumables, and each storage drum comprises a plurality of spaces arranged in a plurality of layers and columns for storing the consumables, and wherein the transfer robot is configured to transfer the consumables to corresponding spaces of corresponding storage drums for storage, and wherein the plurality of storage drums are arranged adjacent to the central operation compartment and the liquid operation compartments, so that the transfer robot in the storage compartment is capable of transferring the consumables in the storage drums to at least one of the central operation compartment and the liquid operation compartment.

11. The system for the expression, purification, and detection and screening of biological drugs according to claim 7, wherein the central operation compartment comprises an operation table-board mounted with at least one of following devices: a consumable lid opening/closing unit, a centrifuge unit, a vacuum filtration unit, a

metal bath unit, a sample oscillation unit, a consumable storage rack, a secondary storage rack for secondary storage of materials, and a multi-degree-of-freedom robot.

12. The system for expression, purification, and detection and screening of biological drugs according to claim 11, wherein a laminar air-return mesh plate is provided on the operation table-board to allow a laminar returned-air to enter an internal space of the central operation compartment through the laminar air-return mesh plate;

wherein the multi-degree-of-freedom robot is mounted on a linear motor module, which includes a cross beam extending in a horizontal direction and a linear motor mounted on the cross beam and driving the multi-degree-of-freedom robot in a direction along which the cross beam extends;

wherein a space is reserved in a middle portion of the operation table-board of the central operation compartment, and the space reserved is configured to receive a consumable stage sliding table of the liquid operation compartment.

13. The system for expression, purification, and detection and screening of biological drugs according to claim 7, wherein the central operation compartment is configured to perform at least one of following operations: vacuum filtration operation, centrifugal separation, centrifugal enrichment, vibration mixing operation, consumable lid opening/closing operation, and metal bath incubation operation, and wherein the liquid operation compartment is configured to perform at least one of following operations: plasmid preparation and frozen tube lid opening/closing operation, culture and replenishment of the biological samples, transfection expression of biological samples, magnetic bead sorting, magnetic bead purification, and pretreatment of the biological samples to be detected.

14. The system for expression, purification, and detection and screening of biological drugs according to claim 13, wherein the liquid operation compartment comprises at least one pipetting unit configured to transfer liquid required in a

process to perform corresponding operations.

15. The system for expression, purification, and detection and screening of biological drugs according to claim 14, wherein the pipetting unit is configured to be movable along a X axis and comprises one or more pipetting heads each of which is configured to be movable independently along a Y axis and a Z axis inside the pipetting unit, wherein the Y axis is in a horizontal plane and perpendicular to the X axis, and the Z axis is in a vertical plane and perpendicular to the X axis and the Y axis;

wherein the pipetting unit comprises one or more movers mounted along a direction of the Y-axis, so that each pipetting head is movable along the direction of the Y-axis under driving of the movers.

16. The system for expression, purification, and detection and screening of biological drugs according to claim 15, wherein the pipetting unit is mounted on a linear motor gantry main frame structure, which includes two guide rail structures spaced from each other and a cross beam extending between the two guide rail structures, the pipetting unit being provided on the cross beam;

wherein the guide rail structures are configured to extend along the X axis, and the cross beam is movable in a direction of the X-axis along the guide rail structures;

wherein the guide rail structures and the cross beam are components of a linear motor, wherein the guide rail structures constitute a stator of the linear motor and the cross beam constitutes a mover of the linear motor, and no mechanical connection is present between the guide rail structures and the cross beam.

17. The system for the expression, purification, and detection and screening of biological drugs according to claim 15, wherein the liquid operation compartment further comprises at least one of following items:

a unit for pumping and replenishing liquid and a pump set, wherein the unit

for pumping and replenishing liquid is used for providing required process fluid to the pipetting unit, and the pump set is used for pumping the process fluid into pipes of the unit for pumping and replenishing liquid;

an operation stage and a consumable stage sliding table for supporting the operation stage, and the consumable stage sliding table is configured to be able to slide out of and slide into the liquid operation compartment in a controlled manner so as to facilitate loading or unloading of the consumables onto or from the operation stage, wherein when the consumable stage sliding table slides out of the liquid operation compartment, it is received in a corresponding space of the central operation compartment;

two or more pipetting units, which are configured to run independently or in parallel in two or more independent operation areas when a small amount of consumables are in operation, and configured to be integrated together to run integrally when a large amount of consumables are in operation.

18. The system for expression, purification, and detection and screening of biological drugs according to claim 1, wherein the sample detection platform is configured to perform at least one of following operations: chromatographic sample preparation, high performance liquid chromatography detection, mass spectrometry detection, gel electrophoresis detection, ELISA analyzer detection, and endotoxin detection, and wherein the sample detection platform is equipped with at least one of following detection devices: a high performance liquid chromatograph, a mass spectrometer, a ELISA analyzer, a gel electrophoresis apparatus, an endotoxin detector, a counter, an imager and a real-time fluorescence quantitative analyzer.

19. The system for expression, purification, and detection and screening of biological drugs according to claim 18, wherein the sample detection platform comprises at least one of following items:

a man-machine cooperative robot which is used for transferring the

biological samples to be detected to different detection locations on the sample detection platform, wherein the man-machine cooperative robot comprises a force feedback unit, and wherein the man-machine cooperative robot is provided on a linear module and movable along the linear module;

a detection device mounting turntable including a rotary platform on which the detection devices are mounted, wherein the rotary platform is capable of rotating the detection device to a side facing the man-machine cooperative robot to implement detection operation and to a side facing operators to implement liquid replacement and/or maintenance, wherein the rotary platform is configured to be driven by a motor via a drag chain to rotate.

20. The system for expression, purification, and detection and screening of biological drugs according to claim 4, wherein the incubator is provided with a CO_2 pipe for replenishing CO_2 into the incubator and a CO_2 sensor for measuring a concentration of CO_2 in the incubator, so as to control the concentration of CO_2 in the incubator, and wherein the incubator is further provided with a CO_2 inflation valve for controlling the replenishment of CO_2 and a CO_2 pipe filter for removing impurities in CO_2.