EDA Public Inspection Report (EDA-PIR) of biological products

Part 1	**General information**
Manufacturers details	
Company information	
Name of manufacturer	*CanSino Biologics Inc- China*
Inspected site	
Address of inspected manufacturing site	*Address: CanSino Biologics Inc., 185 South Avenue, TEDA West District, Tianjin, China 300462* *Telephone number: 022-58213600& EXT.6000* *Fax: 022-58213600& EXT.6009*
Inspection details	
Dates of inspection	*From 26 to 30 May 2025*
Type of inspection	*Overseas inspection, planned, and announced for preapproval*
Introduction	
General information about the company and site	*CanSino Biologics Inc- China specializes in vaccine manufacturing, encompassing the entire process from drug substance production to the final drug product. This includes upstream and downstream processing, blending, formulation, and filling. The company produces vaccines in various presentations such as vials, prefilled syringes, and single or multi-dose formats, utilizing aseptic filling technology for product manufacturing.*
Brief report on inspection activities undertaken	
Scope and limitations	
Areas inspected	*This is a scheduled pre-approval inspection with a scope encompassing general GMP aspects, including QMS, personnel, premises and equipment, documentation, production, quality control, contract manufacturing and analysis, complaints and product recalls, as well as self-inspection. The inspection specifically pertains to Menhycia, a Meningococcal ACWY polysaccharide conjugate vaccine CanSino Biologics Inc- Tianjin- China* *The final product of Group ACWY135 Meningococcal Conjugate Vaccine (CRM197) consists of purified capsular polysaccharides covalently linked to a carrier protein CRM197, which is filled in two vials, one is white loose substance (Group A and Group C Meningococcal Conjugates), and the other vial contains clear liquid, without precipitation or foreign matters (Group W135 and Group Y Meningococcal Conjugates* 1. *Facility Building 003 – for Purified CRM197 Protein & Men A, C, W, Y Conjugate Drug Substance and drug product* 2. *Building 006 -warehouse for API and excipient* 3. *Building 014 – warehouse for primary packaging material* 4. *Quality control Lab*

	5. *Utilities (Water station &HVAC)*
Restrictions	None
Out of scope	*Any product rather than a Meningococcal ACWY polysaccharide conjugate vaccine*
Inspected biological product	*Menhycia, a Meningococcal ACWY polysaccharide conjugate vaccine*
Abbreviations	
AHU	*Air Handling Unit*
ALCOA	*Attributable, Legible, Contemporaneous, Original and Accurate*
API	*Active Pharmaceutical Ingredient*
APQR	*Annual Product Quality Review*
BDL	*Below Detection Limit*
BMR	*Batch Manufacturing Record*
BPR	*Batch Packaging Record*
CAPA	*Corrective Actions and Preventive Actions*
CC	*Change Control*
CFU	*Colony-Forming Unit*
CoA	*Certificate of Analysis*
CpK	*Process Capability Index*
CPP	*Critical Process Parameter*
CQA	*Critical Quality Attribute*
DQ	*Design Qualification*
EM	*Environmental Monitoring*
FAT	*Factory Acceptance Test*
FBD	*Fluid Bed Dryer*
FMEA	*Failure Modes and Effects Analysis*
FPP	*Finished Pharmaceutical Product*
FTA	*Fault Tree Analysis*
FTIR	*Fourier Transform Infrared Spectrometer*
GC	*Gas Chromatograph*
GMP	*Good Manufacturing Practice*
HACCP	*Hazard Analysis and Critical Control Points*
HPLC	*High-Performance Liquid Chromatograph*
HVAC	*Heating, Ventilation and Air Conditioning*
IR	*Infrared Spectrophotometer*
IQ	*Installation Qualification*
KF	*Karl Fisher*
LAF	*Laminar Air Flow*
LIMS	*Laboratory Information Management System*
LoD	*Limit of Detection*
LOD	*Loss on Drying*

MB	*Microbiology*
MBL	*Microbiology Laboratory*
MF	*Master Formulae*
MR	*Management Review*
NMR	*Nuclear Magnetic Resonance Spectroscopy*
NRA	*National Regulatory Agency*
OQ	*Operational Qualification*
PHA	*Process Hazard Analysis*
PM	*Preventive Maintenance*
PpK	*Process Performance Index*
PQ	*Performance Qualification*
PQR	*Product Quality Review*
PQS	*Pharmaceutical Quality System*
QA	*Quality Assurance*
QC	*Quality Control*
QCL	*Quality Control Laboratory*
QRM	*Quality Risk Management*
RA	*Risk Assessment*
RCA	*Root Cause Analysis*
SOP	*Standard Operating Procedure*
TAMC	*Total Aerobic Microbial Count*
TFC	*Total Fungi Count*
TLC	*Thin Layer Chromatography*
URS	*User Requirements Specifications*
UV	*Ultraviolet-Visible Spectrophotometer*
Part 2	**Brief summary of the findings and comments**

1. Pharmaceutical Quality System

1.1 Management review of Pharmaceutical Quality system*: was established, implemented and documented, with written procedures covering essential quality elements being in place. The procedures that were reviewed and discussed during the inspection were generally of an acceptable standard. Production and quality control operations were independently managed and specified in written form. GMP requirements were essentially being met*

1.2 Product quality review

The Product Quality Review (PQR) is conducted to evaluate product performance against relevant quality attributes to ensure process consistency, verify the suitability of existing specifications, identify trends, and highlight opportunities for product or process improvement. This is achieved through trend analysis and the application of statistical and process control tools. The process for preparation, review, and approval of the annual PQR was assessed during the audit.

An annual Product Quality Review report for a vaccine product was reviewed. The report covered batches manufactured during the reporting period, including released batches and batches still undergoing testing at the time of review. It also included an assessment of raw materials, packaging

materials, and consumables received during the year, with the majority found to comply with the established specifications, while nonconforming materials were appropriately rejected and returned to suppliers. *Overall, the reviewed PQR report was found to be comprehensive and adequately addressed the critical aspects related to product quality and safety.*
1.3 Quality risk management *As part of the quality risk management system, the company established a contamination control strategy (CCS) aimed at minimizing contamination risks across all stages of the manufacturing process.* *The CCS was found to cover potential sources of contamination, including premises, equipment, utilities, process flow, materials, and personnel. Risks associated with these areas were identified, analyzed, and documented, and mitigation measures were implemented accordingly. However, during the review, it was observed that the effectiveness of the implemented measures had not been evaluated. Therefore, the CCS should be periodically reviewed and updated, where appropriate, to ensure continual improvement and ongoing effectiveness.*
1.4 Deviation Management *Deviation handling was performed in accordance with an approved written procedure that describes the methodology for monitoring, reporting, investigation, and the implementation of corrective and preventive actions (CAPA) related to deviations.* *The deviation logbook for the relevant reporting period, along with selected deviation records, was reviewed during the inspection and found to be adequately managed and documented.*
1.5 Change Control *Change control activities were managed in accordance with an approved written procedure established to ensure that all proposed changes are appropriately assessed through risk evaluation, reviewed, approved, implemented, and documented in a controlled manner to maintain product quality and reguslatory compliance.* *A sample of implemented change controls was reviewed during the inspection and was found to be satisfactorily managed and documented.*
1.6 Complaints *Change control activities were performed in accordance with an established procedure to ensure that all proposed changes are appropriately assessed, reviewed, approved, implemented, and documented in a controlled manner to maintain quality and compliance requirements.* *A sample of implemented change controls was reviewed during the inspection and found to be appropriately managed and documented., and some deficiencies were identified and covered by acceptable CAPA.*
1.7 Product Recall *Recall activities were conducted in accordance with an approved written procedure governing the product recall system. The company maintained a system designed to ensure timely and effective recall of products when required.* *A mock recall system was also established to evaluate the effectiveness of the recall process. During the inspection, a sample mock recall report was reviewed and found to be satisfactorily implemented and documented.*

1.8 Self-inspection and CAPA managment

The company established a GMP-compliant self-inspection system managed in accordance with an approved procedure to ensure continuous compliance with GMP requirements and internal standards.

Self-inspection schedules and selected self-inspection reports for the reviewed periods were assessed during the inspection. One deficiency was identified and addressed by acceptable CAPA

1.9 Quality aduits and supplier's audit

The company established a structured supplier qualification and management system based on a risk-based material classification approach. Materials were categorized according to their criticality to ensure appropriate qualification and oversight activities.

The supplier qualification process included the use of questionnaires, sample evaluation and testing, and supplier assessments, which may involve either remote or on-site audits depending on the material classification and associated risk. For low-risk materials, reliance on manufacturer documentation was permitted where justified.

Periodic supplier re-evaluations were conducted according to established procedures, and an annual supplier assessment plan was maintained.

During the inspection, the approved supplier management system and selected supplier qualification records were reviewed. While the overall system was found to be generally established and documented,number of observations were identified and and addressed by acceptable CAPA

1.10 Personnel

Organization organogram

Staff working on-site have appropriate qualifications, experience and training. The quality assurance function was independent of all other plant functions. Responsibilities of key personnel were described in job descriptions in clear manners. Many job descriptions and related documents reviewed during inspection as job description of qualified personnel who responsible for batch release

Training and qualifications

The company has established a comprehensive training programme covering all functional categories within the manufacturing site, tailored according to each staff member's area of specialisation. Newly joined employees are required to complete an initial onboarding programme covering fundamental GMP requirements, and may only commence their assigned duties upon successfully passing the designated competency evaluation. In addition, structured continuous learning programmes are in place to ensure the ongoing professional development of all personnel.

Personnel hyigene

The company has established documented gowning procedures applicable to each cleanroom classification, and personnel have received training in the correct implementation of these procedures. During the course of the inspection, a few observations were identified relating to personal hygiene and gowning practices. However, the company demonstrated a satisfactory

response by submitting appropriate Corrective and Preventive Actions (CAPAs) for each observation, which were reviewed and found to adequately address the identified deficiencies. The CAPAs were accordingly accepted by the inspection team.

1.11Documentation

The company operates a structured documentation system or aganised into four hierarchical categories: Policies, Master Plans, Standard Operating Procedures (SOPs), and Reports. All documents are maintained under a defined coding system with version control in place to ensure traceability and prevent the use of obsolete documents. A formal procedure governs the periodic review and update of documents to ensure their continued relevance and alignment with current regulatory requirements and operational practices.

During the inspection, a representative selection of documents was reviewed, as detailed in report . A number of observations were identified in relation to the documentation system; however, the company responded with corrective and preventive actions that were reviewed by the inspection team and found to adequately address the identified deficiencies. The submitted CAPAs were accordingly accepted.

1.12Batch Release Process

The company has established a batch release system supported by a detailed Standard Operating Procedure that clearly defines the steps and responsibilities involved in the release process. Qualified personnel are designated to review all essential batch data and documentation prior to making the regulatory decision to either place a batch on hold or proceed with its release.

During the inspection, the qualifications and competencies of the responsible personnel were reviewed and found to be appropriate for the functions they perform. In addition, a representative number of batch records were examined to verify the consistent and correct application of the release procedures in practice. The reviewed batches demonstrated satisfactory compliance with the established release requirements, and the overall batch release system was found to be implemented in an acceptable manner.

2. Production

2.1 Drug substance

The company's manufacturing operations were found to be conducted in general alignment with Good Manufacturing Practice (GMP) principles. All manufacturing and monitoring activities were carried out in accordance with approved Standard Operating Procedures, with clearly defined process steps and assigned responsibilities. Critical processes and systems were subject to a structured monitoring programme incorporating defined alert and action limits. A robust process validation programme is in place, and the company has established a requirement for revalidation prior to implementing any major process change.

All manufacturing processes were validated, with Critical Process Parameters (CPPs) and their impact on Critical Quality Attributes (CQAs) clearly identified and controlled. Standard Operating Procedures are in place governing the receipt, handling, and transportation of raw materials, as well as the release of packaging materials. All manufacturing processes are documented in approved Master Formulae.

The facility manufactures conjugate vaccine components through multi-stage biological production processes. These processes involve upstream fermentation using controlled bioreactor systems,

followed by harvesting and downstream purification steps employing established biochemical techniques. Conjugation of purified polysaccharide antigens with carrier protein is performed under defined process conditions, with intermediate and final drug substances stored under validated conditions for defined shelf-life periods. In-process controls are applied at critical manufacturing stages to confirm process performance and product quality throughout the production sequence. Overall, the manufacturing processes reviewed during the inspection were found to be appropriately controlled and documented, and in substantial compliance with applicable GMP requirements.

2.2 Fill and finish operations

The company governs all drug product manufacturing activities through approved Standard Operating Procedures. For the Meningococcal Conjugate Vaccine (CRM197) manufactured at the facility, lyophilisation and vial filling operations are conducted at defined batch sizes within validated ranges. Process validation studies have confirmed that drug product batches manufactured at the facility consistently meet the approved product specifications, demonstrating that the manufacturing process is appropriately controlled and reproducible within the validated operating parameters.

2.3 Visual inspection

Automated visual inspection is carried out using a qualified inspection machine, which is subject to challenge testing with predefined defective reference samples at the commencement of each batch to confirm correct machine performance. Following completion of automated inspection, a randomly selected sample is subjected to manual visual inspection as an additional verification step to confirm the accuracy and reliability of the automated system

2.4 Process validation

The company has established a process validation program covering all manufacturing processes with a demonstrated impact on product quality and efficacy. A selection of process validation reports was reviewed during the inspection to assess the adequacy and implementation of the validation system.

For the drug substance, Process Performance Qualification (PPQ) was conducted for the conjugation manufacturing process in accordance with the approved production procedure. Three consecutive batches were produced at the defined batch scale, and all critical quality attributes met the predetermined acceptance criteria across all three batches. Sterility and bacterial endotoxin testing also complied with specifications.

For the drug product, PPQ was conducted for the freeze-dried conjugate vaccine manufacturing process in accordance with the approved production procedure, covering final bulk preparation, filling, lyophilization, capping, and visual inspection. Three consecutive batches were produced at the defined commercial batch scale. Critical process parameters including filtration time, filling time, and lyophilization cycle duration were all within the validated ranges, and the lyophilization program was confirmed to perform consistently across the qualified equipment units used during the study.

The company also demonstrated a functioning revalidation program. A process revalidation was appropriately conducted following a defined change to fermentation medium composition, confirming that the modification had been assessed for its impact on product quality prior to implementation at commercial scale. The revalidation outcomes were documented and found to meet

the required acceptance criteria.

Overall, the process validation program was found to be appropriately structured, executed, and documented in compliance with applicable GMP requirements.

2.5 Reprocessing: NA

2.6 Batch manufacturing record

The Master Formula was reviewed and compared with the Batch Records and found to be complying. The company adheres to the approved and validated manufacturing process.

3. Facilities and equipment system

3.1 Qualification and validation

Qualifications of HVAC were revised and found satisfactory. and All validation and calibration were conducted in accordance with a pre-defined protocol.

3.2 Calibration

All equipment is calibrated or validated prior to use and is subject to a scheduled periodic recalibration plan.

3.3 Maintenance

The facility is equipped with full capabilities for drug substance and drug product manufacturing, encompassing fermentation, purification, conjugation, bulk preparation, filling, lyophilization, packaging, quality control testing, and final product release. The manufacturing areas were appropriately designed and organized to support the different operational stages of the production process within dedicated functional zones and supporting utilities.

All equipment with a direct or indirect impact on product quality and safety is subject to qualifications prior to initial use and maintained under a routine requalification and calibration program. During the facility tour, a representative selection of equipment was inspected, and qualification and calibration records were verified. All items reviewed were found to be current and compliant with their respective qualification and calibration schedules.

As a specific example, the requalification of the Restricted Access Barrier System (RABS) used on the vial filling line was reviewed in detail. The requalification study confirmed satisfactory performance across all critical parameters assessed, including airborne particle counts, air velocity, and barrier integrity, with assessments conducted at the defined periodic frequency. All results met the established acceptance criteria, demonstrating that the filling line critical protection system remains in a state of validated compliance.

Overall, the equipment qualification and calibration program was found to be well-structured, consistently implemented, and maintained in accordance with applicable GMP requirements.

3.4 Water System

The water system supplying the manufacturing facility has been qualified and is maintained under a routine sampling and monitoring program in accordance with approved procedures. The water treatment system employs a multi-stage purification process, producing Purified Water and Water for Injection (WFI) through sequential treatment steps. Each production area is served by a dedicated storage tank, and sampling points are available at designated return loop locations to support system monitoring.

Total Organic Carbon (TOC) and conductivity are monitored continuously online using a validated monitoring system. Chemical and microbiological testing is conducted in accordance with the approved daily monitoring program, supported by a documented risk assessment that defines

sampling point selection and frequency across the system.
During the inspection, the inspection team witnessed a demonstration of the water sampling procedure. The sampling technique observed was found to be implemented in compliance with the approved procedure, demonstrating adequate personnel training and procedural adherence.
System sanitization is performed on a weekly basis using a validated thermal method, providing an appropriate and documented approach to bioburden control within the water distribution system.
Overall, the water system was found to be appropriately qualified, monitored, and maintained in compliance with the requirements for pharmaceutical water systems.

3.5 HVAC system

The company maintains a structured requalification program for production areas to verify their continued compliance with applicable facilities and environmental requirements. During the inspection, the requalification study for the vial filling facility was reviewed as a representative example of program implementation. The HVAC system requalification assessment confirmed satisfactory performance across all critical parameters evaluated, including air volume, airflow direction, differential pressure, filter integrity, room recovery time, and particle counts, all of which met the defined acceptance criteria. However, deficiencies were identified in the documentation of this study and are addressed in the Observations section of this report.
Air flow pattern visualization studies for the filling and capping areas were also reviewed and found to have been conducted in accordance with the applicable procedure.

3.6 Aseptic process simulation

Aseptic Process Simulation (Media Fill)

The company conducts Aseptic Process Simulation (APS) in accordance with a well-structured procedure designed to demonstrate that the aseptic manufacturing process is capable of consistently producing sterile products under routine operating conditions.
The APS revalidation protocol and corresponding report for vial production on the designated filling line were reviewed during the inspection. The simulation was conducted using sterile Tryptic Soy Broth (TSB) as the growth medium. Incubated units were subjected to a two-stage incubation program at temperatures appropriate for the detection of both bacterial and fungal contamination, with incubation periods of seven days at each temperature range in accordance with current industry standards. The growth promotion test certificate was also reviewed and confirmed satisfactory performance of the media used.
Whilst the overall APS program was found to be appropriately structured and documented, a deficiency was identified during the review and covered with accepted CAPA

3.*7 Cleaning Validation*

The cleaning procedures for equipment parts and tools used in blending and filling were validated according to the approved validation protocol. The validation was performed over three consecutive batches and included assessment of cleaning effectiveness as well as evaluation of holding times for both cleaned and soiled equipment.

3.8 Storage Equipment

Equipment with product-contact surfaces, including vessels, transfer lines, filtration systems, and formulation equipment, is constructed from materials such as SS 316, polypropylene (PP), polycarbonate (PC), or glass, chosen according to product handling requirements. Production

equipment is designed for ease of cleaning, employing validated Clean-in-Place (CIP) and Sterilize-in-Place (SIP) systems. Key production equipment for the manufacture of Pneumococcal Polysaccharide (Intermediate), CRM197 (Carrier Protein), Pneumococcal Polysaccharide Bulk Conjugate (Drug Substance), and Pneumococcal Polysaccharide Conjugate Vaccine (Adsorbed, 14-Valent) (Drug Product) was available and reviewed during the inspection.

3.9 Computerized system

The facility operates a number of computerized systems that play a critical role in the management, monitoring, and control of manufacturing operations and site infrastructure. These systems collectively support key GMP functions including materials management, environmental monitoring, and facility environmental control.

All computerized systems in use have been subjected to a formal qualification process prior to operational deployment. During the inspection, a selection of qualification protocols and reports was reviewed to assess the adequacy and implementation of the computerized system validation program. The reviewed qualification study demonstrated that essential system functions had been verified, including alarm functionality, power recovery behavior, and data communication integrity, all of which were found to meet the defined acceptance criteria.

Overall, the computerized system validation program was found to be appropriately structured and implemented in compliance with applicable GMP requirements for computerized systems used in pharmaceutical manufacturing environments.

3.10 Environmental monitoring

Regarding environmental monitoring, the company operates an automated Environmental Management System (EMS) for the continuous monitoring of temperature and humidity throughout the production facility. Viable particle monitoring is conducted using settled plates in accordance with a frequency-based program. Deficiencies were identified and company covered it with an acceptable CAPA.

4. Laboratory control system

The quality control laboratory premises were inspected for compliance with applicable GMP standards. The laboratories were found to be well organized, with designated areas for testing and storage activities to prevent cross-contamination. Environmental conditions including temperature, humidity, and cleanliness are monitored and controlled in accordance with the requirements for analytical testing operations. A number of observations were identified during the inspection of the laboratory environment covered with acceptable CAPA report.

The laboratory quality management system, including SOPs, forms, and records management, was found to be controlled, reviewed, and updated in accordance with the applicable procedures. Logbooks and analytical data were appropriately documented. Electronic records were maintained with restricted access controls and functional audit trails. A review of data integrity against ALCOA principles confirmed that data integrity was largely maintained, with no significant discrepancies identified in the audit trail review. Observations were identified in relation to documentation and covered with acceptable CAPA

Laboratory equipment was reviewed for qualification, calibration, and maintenance status. The equipment program was found to be generally adequate; however, observations were raised in relation to equipment placement and use conditions in specific laboratory areas, which are addressed

in the Observations section of this report.
Personnel competency and training were assessed. Laboratory staff were found to be qualified and in possession of documented training records covering analytical techniques and equipment operation. An observation was raised and covered with acceptable CAPA.
SOPs governing sample receipt, testing, and data recording were found to be detailed and appropriate. Compliance with approved testing procedures was assessed through direct witnessing of analytical tests; an observation was raised and covered with acceptable CAPA

4.1 Analytical Method Validation

The adequacy of the analytical method validation program was reviewed during the inspection. Validated methods are employed for all routine testing activities, and validation reports were available for all critical analytical methods. The validation studies reviewed demonstrated appropriate evaluation of method performance characteristics including robustness, accuracy, precision, and specificity, in accordance with applicable guidelines. The method validation programme was found to be well-documented and fit for purpose.

4.2 Out of Specifications (OOS)

The laboratory has established a structured and documented process for the investigation of Out-of-Specification results. The OOS investigation procedure incorporates a systematic root cause analysis approach, with corrective and preventive actions documented and tracked through to resolution. The OOS investigations reviewed during the inspection demonstrated an appropriate level of scientific rigor and regulatory compliance, and the overall OOS management system was found to be adequately implemented.

4.3 Reference Standard

The reference standard management procedure was reviewed and found current, adequately version-controlled, and within its validity period. The procedure applies to all reference standards used across the facility.
A dedicated reference standard storage room was in operation within the quality control laboratory area. reference standards were stored under appropriate refrigerated conditions, with the designated unit subject to periodic calibration and temperature monitoring in accordance with the approved procedure.
The receiving, usage, and discarding logbook for the reference standard in use was reviewed and found satisfactory, with adequate traceability maintained throughout the reference standard lifecycle

4.4 Animal house and testing facilities

NA

5. Material System

The facility operates a validated electronic materials management system integrated with an enterprise resource planning platform to govern all material-related activities across the site. The system manages the full material lifecycle from purchase order generation through receipt, sampling, quarantine, release, and dispatch to production areas. Expiry status monitoring for all materials is conducted systematically through the same system monthly, ensuring that no expired or out-of-specification materials are inadvertently released for use.
Dedicated warehouse facilities are in place for the segregated storage of different material categories, including active pharmaceutical ingredients, excipients, cell banks, primary packaging materials, and

finished products. All storage areas provide adequate capacity for the volumes handled and are equipped with continuous environmental monitoring systems to ensure that appropriate storage conditions are always maintained.
All materials are sourced exclusively from approved suppliers, and the supplier qualification and management program is governed by dedicated procedures. The qualified supplier list for raw materials, excipients, and packaging materials applicable to the meningococcal conjugate vaccine was reviewed during the inspection, along with selected supplier evaluation records. Observations were identified in relation to supplier management documentation and are detailed in the Observations section of this report.
A defined material release system is in place, operated in accordance with an approved release management procedure. Critical materials are subject to full analytical testing prior to release. Packaging materials are subject to full testing upon initial qualification, transitioning to a reduced testing programme thereafter based on established supplier performance. Non-critical consumable materials are released based on manufacturer certificates of analysis in accordance with a documented risk-based approach.
Overall, the materials management system was found to be well-organized and supported by appropriate procedures, with the exception of the observations noted which covered accepted CAPA.

6. Packaging and Labelling System

Packaging and labelling operations are conducted in a designated controlled area equipped with an automated packaging system appropriately designed to prevent batch mix-ups and ensure operational integrity. In accordance with the approved procedure, only one batch is processed at a time, thereby maintaining full batch traceability throughout the packaging operation.
Packaging data entry is performed by a designated operator and is subject to independent verification and approval by the Quality Assurance department prior to batch processing.
A formal reconciliation of all printed packaging materials is performed at the conclusion of each packaging operation to ensure full accountabilities for all issued materials and to confirm compliance with the approved batch documentation.
Overall, the packaging and labelling system was found to be appropriately controlled and implemented in accordance with applicable GMP requirements.

Part 3	**Inspection outcome**

- *Based on the areas inspected, the people met, and the documents reviewed, and considering the findings of the inspection, including the observations listed in the Inspection Report, CanSino Biologics Inc., located at 185 South Avenue, TEDA West District, Tianjin, China 30046, was considered to be operating at an acceptable level of compliance with WHO good manufacturing practices for biological products guidelines.*
- *All the non-compliances observed during the inspection that were listed in the full report as well as those reflected in the EDA-PIR, were addressed by the manufacturer, to a satisfactory level, prior to the publication of the EDA-PIR*
- *This EDA-PIR will remain valid till next inspection, as long as there is any warning or recall from SRA.*

Part 4	**List of GMP Guidelines referenced in the inspection report**

1.WHO good manufacturing practices for pharmaceutical products: main principles. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-eight Report Geneva, World Health Organization, 2014
Short name: ***WHO TRS No. 986, Annex 2***
https://www.who.int/publications/m/item/trs986-annex2
2.WHO good manufacturing practices for active pharmaceutical ingredients. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-fourth Report. Geneva, World Health Organization, 2010
Short name: ***WHO TRS No. 957, Annex 2***
https://www.who.int/publications/m/item/annex-2-trs-957
3.WHO guidance on good practices for desk assessment of compliance with good manufacturing practices, good laboratory practices and good clinical practices for medical products regulatory decisions. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fifty-second Report. Geneva, World Health Organization, 2018
Short name: ***WHO TRS 1010, Annex 9***
https://www.who.int/publications/m/item/trs1010-annex9
4. WHO Good Manufacturing Practices: water for pharmaceutical use. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fifty-fifth Report. Geneva, World Health Organization, 2021
Short name: ***WHO TRS No. 1033, Annex 3***
https://www.who.int/publications/m/item/annex-3-trs-1033
5.WHO guidelines for sampling of pharmaceutical products and related materials. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Thirty-ninth Report. Geneva, World Health Organization, 2005
Short name: ***WHO TRS No. 929, Annex 4***
https://www.who.int/publications/m/item/annex-4-trs-929
6. WHO good practices for pharmaceutical quality control laboratories. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-fourth Report. Geneva, World Health Organization, 2010
Short name: ***WHO TRS No. 957, Annex 1***
https://www.who.int/publications/m/item/trs957-annex1
7.WHO Good Practices for Pharmaceutical Products Containing Hazardous Substances. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-fourth Report. Geneva, World Health Organization, 2010
Short name: ***WHO TRS No. 957, Annex 3***
https://www.who.int/publications/m/item/trs957-annex3
8.Guidelines on heating, ventilation and air-conditioning systems for non-sterile pharmaceutical products. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fifty Second Report Geneva, World Health Organization, 2018
Short name: ***WHO TRS No. 1010, Annex 8***
https://www.who.int/publications/m/item/Annex-8-trs-1010

9.Guidelines on heating, ventilation and air-conditioning systems for non-sterile pharmaceutical products. Part 2: Interpretation of Guidelines on heating, ventilation and air-conditionning systems for non-sterile pharmaceutical products. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fifty-Third Report Geneva, World Health Organization, 2018
Short name: WHO TRS No. 1019, Annex 2
https://www.who.int/publications/m/item/trs1019-annex2
10. WHO guidelines on transfer of technology in pharmaceutical manufacturing WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fifty-Fifth Report Geneva, World Health Organization, 2022
Short name: *WHO TRS No. 1044, Annex 4*
https://cdn.who.int/media/docs/default-source/medicines/norms-and-standards/guidelines/production/trs1044-annex4-technology-transfer-in-pharmaceutical-manufacturing.pdf
11. WHO good manufacturing practices for sterile pharmaceutical products. Expert Committee on Specifications for Pharmaceutical Preparations. Fifty-Fifth Report Geneva, World Health Organization, 2022 (WHO Technical Report Series, No. 1044), Annex 4.
Short name: *WHO TRS No. 1044, Annex 2*
https://www.who.int/publications/m/item/trs1044-annex2
12. General guidelines for the establishment maintenance and distribution of chemical reference substances. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-First Report Geneva, World Health Organization 2007
Short name: *WHO TRS No. 943, Annex 3*
https://www.who.int/publications/m/item/trs943-annex3
13. WHO good practices for pharmaceutical microbiology laboratories. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report Geneva, World Health Organization, 2011
Short name: *WHO TRS No. 961, Annex 2*
https://www.who.int/publications/m/item/trs961-annex2
14. WHO guidelines on quality risk management. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Seventh Report Geneva, World Health Organization, 2013
Short name: *WHO TRS No. 981, Annex 2*
https://www.who.int/publications/m/item/trs981-annex2
15. WHO guidelines on variation to a prequalified product. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Seventh Report Geneva, World Health Organization, 2013
Short name: *WHO TRS No. 981, Annex 3*
https://www.who.int/publications/m/item/annex-3-trs-981
16. WHO guidelines for drafting a site master file. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report Geneva, World Health Organization, 2011
Short name: *WHO TRS No. 961, Annex 14*
https://www.who.int/publications/m/item/tr961-annex14

17. Good Manufacturing Practices: Guidelines on validation. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fifty-Third Report Geneva, World Health Organization, 2019
Short name: *WHO TRS No. 1019, Annex 3*
https://www.who.int/publications/m/item/trs1019-annex3
18. WHO General guidance on hold-time studies WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Ninth Report Geneva, World Health Organization, 2015
Short name: *WHO TRS No. 992, Annex 4*
https://www.who.int/publications/m/item/trs992-annex4
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