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Prequalification Team Inspection services
WHO INSPECTION REPORT
of the Quality Control laboratory

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<tr><td>Name of the laboratory</td><td>Institute of Drug Quality Control Ho Chi Minh city (IDQC)</td></tr>
<tr><td>Corporate address of Laboratory</td><td>200 Co Bac Street District 1
Ho Chi Minh City (HCMC)
Viet Nam</td></tr>
<tr><td colspan="2">Inspected Laboratory</td></tr>
<tr><td>Address of inspected Laboratory if different from that given above</td><td>Same as above</td></tr>
<tr><td>Summary of activities performed at the laboratory</td><td>
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<tr><td>Physical / Chemical analysis</td><td>pH, loss on drying, water content, , optical rotation, disintegration, dissolution, density, uniformity of dosage unit (mass, content)</td><td>pH, loss on drying, water content, melting point, sulphated ash, acid insoluble ash, residual solvents, limit test</td></tr>
<tr><td>Identification</td><td>HPLC (UV-VIS, Fluorescence, RI, DAD, MS detection), GC (FID, MS detection), FTIR, UV-VIS spectrophotometry, TLC, chemical reaction</td><td>HPLC (UV-VIS detection), GC (FID, MS detection), FTIR, UV-VIS spectrophotometry, TLC, chemical reaction</td></tr>
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	Microbiological analysis	Sterility, microbial limit test, LAL test, microbial assay of antibiotics,	Sterility, microbial limit test, LAL test, microbial assay of antibiotics

Inspection details	
Dates of inspection	17 to 19 October 2016
Type of inspection	Initial inspection
Introduction	
History	This was the first WHO Prequalification inspection of IDQC.
Scope and limitations	
Areas inspected	Physical, chemical, instrumentation and microbiological laboratories
Restrictions	None
Out of scope	None
Key persons met	Nguyen Ngoc Vinh, Director, Angela Oliver, observer, USP-PQM Hariram Ramanathan, observer, USP-PQM Truong Thi Thu Lan, Technical Vice Director /Head of Quality Assurance Unit Tran Thi Quynh Chi, Logistic Vice Director Chuong Ngoc Nai, Deputy Head Nguyen Thanh Ha, Standing Deputy Head Thi Minh Tam, Head of Microbiology Department Trinh Hoang Duong, Standards & reference substances establishment Tran Thi Thu Ha, Head of active pharmaceutical ingredient analysis department Huynh Ngoc Duy, Head of formulation analysis department Nguyen Thi Kim Phuong, Deputy Head of formulation analysis department

Abbreviations

AHU	air handling unit
ALCOA	attributable, legible, contemporaneous, original and accurate
API	active pharmaceutical ingredient
BDL	below detection limit
CAPA	corrective actions and preventive actions
CC	change control
CFU	colony-forming unit
CoA	certificate of analysis
DQ	design qualification
EM	environmental monitoring
FAT	factory acceptance test
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		
		MR	management review		
		NMR	nuclear magnetic resonance spectroscopy		
		NRA	national regulatory agency		
		OQ	operational qualification		
		PHA	process hazard analysis		
		PM	preventive maintenance		
		PQ	performance qualification		
		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 recommendations (where applicable)

Brief summary of the findings and comments

1. Organization and management

The Institute of Drug Quality Control (IDQC), located at Ho Chi Minh City (HCMC), is a national quality control laboratory which functions to provide analytical services for the quality and safety of drugs and cosmetics in the southern region of Vietnam, from Da Nang to Ca Mau province. It is a semi-autonomous government agency acting under Vietnam Ministry of Health.

The IDQC provides laboratory testing services of medicines and cosmetics to the government of Viet Nam and the private sector dealers including the manufacturers and the distributors/suppliers.

The IDQC have managerial and technical personnel with the authority and the resources needed to carry out their function which includes identifying the occurrence of departures from the quality management system. The organization chart of IDQC was available. The personnel were allocated responsibilities pertaining to specific functions/sections which included the Assurance Unit, the Department for Testing and Calibrations (which is responsible for testing, calibration and routine maintenance of equipment) and the Functional Departments.

The IDQC designated a full time quality manager who was responsible for the overall implementation and compliance of the quality management system (QMS).

The IDQC had a system of receiving, distributing and supervising/monitoring the samples to various sections/laboratories. Records of all incoming samples including the accompanying documents (e.g. testing specifications; testing methods etc.) were kept and maintained.

2. Quality management system

The laboratory's quality manual (QM) was available which included the quality policy, commitment to establish, its implementation and effective maintenance. Also, QM included the structure of the lab in the form of an organization chart and outlined documentation structure.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

3. Control of documentation

Procedure on document control was reviewed. A number of issues pertaining to inadequate control of documentation were found during the inspection.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

4. Records

The laboratory has an established system to maintain records as cited through the executed laboratory testing and recording. The laboratory maintained procedures for the identification, collection, indexing, retrieval, storage, maintenance and disposal of and access to all quality and technical records. In the review of randomly chosen analytical worksheets, all original observations including calculations and derived data, calibration, validation and verification records and final results were kept and retained on record.

5. Data processing equipment

Work instruction for analysis, documentation, access control and back up preparation of results obtained from chromatographic systems was available. There were some issues noted on access control / privileges as these were not defined, and standalone computers were used.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

6. Personnel

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

7. Premises

The laboratory facilities were considered to be of a suitable size, construction and location.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

8. Equipment, instrument and other devices

There was a program in place for the preventive maintenance of equipment including calibration. The equipment and instruments were calibrated internally and some externally by accredited companies. This section was not inspected in detail.

9. Contracts

It was noted that IDQC did not establish formal contract with their customers and clients.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

10. Reagents

Not inspected.

11. Reference substances and reference materials

There were appropriate procedures for the handling and receipt of primary reference standards and working standards. This section was not inspected in detail.

12. Calibration, verification of performance and qualification of equipment, instruments and other devices

Regarding calibration of equipment and instruments, an annual schedule was available for all lab equipment and instruments. This section was not inspected in detail.

13. Traceability

Calibration certificates which were reviewed during the inspection were traceable to NIST (calibrations are performed by an ISO 17025: accredited company) and reference substances which were reviewed, were primary reference standards (e.g. USP, BP) or traceable to the compendia standards. There was no observation made under this heading.

14. Incoming samples

Incoming sample logbooks were maintained for raw materials, intermediates and finished product samples and were logged in manually. The incoming samples were not adequately stored and handled.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

15. Analytical worksheet

Analytical worksheets for some of the products were reviewed during inspection.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

16. Validation of analytical procedures

The analytical methods were not validated on a routine basis except when there was a request from the customers. It was also noted that manufacturer's analytical methods were not validated as these were approved by drug administration of Viet Nam (DAV). These methods were verified taking accuracy and specificity test before used in the laboratory.

17. Testing

Testing was performed according to the compendial methods or according to client's fully validated methods. The documentation of the full validation was provided by the client. System Suitability test was performed as method verification before use.

18. Evaluation of test results

The work instructions on handling of suspected or out of specification results were in place.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

19. Certificate of analysis

The generation and review process for certificates of analysis (CoA) was inspected by review of the randomly chosen CoAs. The certificates were reviewed in detail and the documentation was found to be appropriate. This section was not inspected in detail.

20. Retained samples

Retain samples were kept in the locked sample storage room under controlled conditions (temperature and humidity). Temperature and humidity are checked and documented twice daily.

The issues related to this section have been adequately addressed by the laboratory, and the same shall be verified during future inspections.

21. Safety

Appropriate safety measures (e.g. emergency shower, eye showers etc.) were installed. This section was not inspected in detail.

PART 3

Conclusion

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, as well as the corrective actions taken the ***Institute of Drug Quality Control Ho Chi Minh city (IDQC), located at 200, Co Bac Street District 1, Ho Chi Minh City, Viet Nam***, was considered to be operating at an acceptable level of compliance with WHO Good Practices for Pharmaceutical Quality Control Laboratories.

All the non-compliances observed during the inspection that were listed in the full report were addressed by the laboratory, to a satisfactory level, prior to the publication of the WHOPIR.

This WHOPIR will remain valid for 3 years, provided that the outcome of any inspection conducted during this period is positive.

PART 4

List of GMP guidelines referenced in the inspection

1. WHO Good Practices for Pharmaceutical Quality Control Laboratories. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-fourth Report. Geneva, World Health Organization, 2010 (WHO Technical Report Series, No. 957, Annex 1
   Short name: WHO TRS No. 961, 957), Annex 1
   http://www.who.int/medicines/publications/44threport/en/

2. 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 (WHO Technical Report Series, No. 986), Annex 2.
   Short name: WHO TRS No. 986, Annex 2
   http://www.who.int/medicines/areas/quality_safety/quality_assurance/expert_committee/trs_986/en/

3. WHO good practices for pharmaceutical microbiology laboratories. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report Geneva, World Health Organization, 2011 (WHO Technical Report Series, No. 961), Annex 2
   Short name: WHO TRS No. 961, Annex 2
   http://whqlibdoc.who.int/trs/WHO_TRS_961_eng.pdf?ua=1

4. WHO Good Manufacturing Practices: water for pharmaceutical use. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fourth-six Report. Geneva, World Health Organization, 2012 (WHO Technical Report Series, No. 970), Annex 2
   Short name: WHO TRS No. 970, Annex 2
   http://www.who.int/medicines/areas/quality_safety/quality_assurance/expert_committee/trs_970/en/

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 (WHO Technical Report Series, No. 929), Annex 4
   Short name: WHO TRS No. 929, Annex 4
   http://whqlibdoc.who.int/trs/WHO_TRS_929_eng.pdf?ua=1

6. WHO guidelines on good manufacturing practices for heating, ventilation and air-conditioning systems for non-sterile pharmaceutical dosage forms. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report Geneva, World Health Organization, 2011 (WHO Technical Report Series, No. 961), Annex 5
   Short name: WHO TRS No. 961, Annex 5
   http://whqlibdoc.who.int/trs/WHO_TRS_961_eng.pdf?ua=1

7. Supplementary guidelines on good manufacturing practices: validation. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fortieth Report. Geneva, World Health Organization, 2006 (WHO Technical Report Series, No. 937), Annex 4
   Short name: WHO TRS No. 937, Annex 4
   http://whqlibdoc.who.int/trs/WHO_TRS_937_eng.pdf?ua=1

8. WHO Good Practices for Pharmaceutical Products Containing Hazardous Substances. WHO Expert on Specifications for Pharmaceutical Preparations. Forty-fourth Report. Geneva, World Health Organization, 2010 (WHO Technical Report Series, No. 957), Annex 2
   Short name: WHO TRS No. 957, Annex 2
   http://www.who.int/medicines/publications/44threport/en/

9. WHO good manufacturing practices for sterile pharmaceutical products. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report Geneva, World Health Organization, 2011 (WHO Technical Report Series, No. 961), Annex 6
   Short name: WHO TRS No. 961, Annex 6
   http://whqlibdoc.who.int/trs/WHO_TRS_961_eng.pdf?ua=1

10. WHO guidelines on transfer of technology in pharmaceutical manufacturing WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report Geneva, World Health Organization, 2011 (WHO Technical Report Series, No. 961), Annex 7
    Short name: WHO TRS No. 961, Annex 7
    http://whqlibdoc.who.int/trs/WHO_TRS_961_eng.pdf?ua=1

11. Model guidance for the storage and transport of time-and temperature-sensitive pharmaceutical products. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report Geneva, World Health Organization, 2011 (WHO Technical Report Series, No. 961), Annex 9
    Short name: WHO TRS No. 961, Annex 9
    http://whqlibdoc.who.int/trs/WHO_TRS_961_eng.pdf?ua=1

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 (WHO Technical Report Series, No.943) Annex 3
Short name: WHO TRS No. 943, Annex 3
http://whqlibdoc.who.int/trs/WHO_TRS_943_eng.pdf?ua=1

13. WHO guidelines on quality risk management. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Seventh Report Geneva, World Health Organization, 2013 (WHO Technical Report Series, No. 981), Annex 2
Short name: WHO TRS No. 981, Annex 2
http://www.who.int/medicines/areas/quality_safety/quality_assurance/expert_committee/trs_981/en/

14. WHO Technical supplements to Model Guidance for storage and transport of time – and temperature – sensitive pharmaceutical products. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Ninth Report Geneva, World Health Organization, 2015 (WHO Technical Report Series, No. 992), Annex 5
Short name: WHO TRS No. 992, Annex 5
http://www.who.int/medicines/areas/quality_safety/quality_assurance/expert_committee/WHO_TRS_992_web.pdf

15. Guidance on good data and record management practices. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fifties Report Geneva, World Health Organization, 2016 (WHO Technical Report Series, No. 996), Annex 5
Short name: WHO TRS No. 996, Annex 5
http://www.who.int/medicines/publications/pharmprep/WHO_TRS_996_annex05.pdf