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# Prequalification Unit Inspection services WHO PUBLIC INSPECTION REPORT

### Desk Assessment of Active Pharmaceutical Ingredient (API) Manufacturer

Part 1	General information	
Company information		
Name of Manufacturer	Solara Active Pharma Sciences Limited	
Corporate address of manufacturer	3 <sup>rd &amp; 4th</sup> Floor Batra Centre No 28, Sardar Patel Road, Guindy, Chennai – 600032, Tamil Nadu, India Tel : 00914443446700, 00914422207500 Fax: 00914422350278 info@solara.co.in	
Inspected site		
Name & address of manufacturing site	Solara Active Pharma Sciences Limited 120A & B, 36, 120P & 121 Industrial Area, Baikampady, New Mangalore - 575011, Karnataka, India N 12.95182° E 74.82561° D-U-N-S: 676159823	
Synthetic Unit/Block/ Workshop	Plant-1 for intermediate manufacturing Plant-2 & Plant-3 for API manufacturing	
Manufacturing license number	Form 25 KTK/25/500/2005 (VIDE ref. No DCD/MFG/SR-156/18-19, valid till March 30, 2023	
Desk assessment d	letails	
Start and end dates of review	24 January – 29 January 2021	
APIs covered by this desk assessment	Active Pharmaceutical Ingredient         Sofosbuvir         Artemether         Oseltamivir monophosphate         Artesunate (non-micronised)         Artesunate (micronised)         Lumefantrine         Zidovudine         Praziquantel	



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List of	1. FDA US EIR, dates of inspection 17 – 21 February 2020
documents	2. WHO inspection report, dates of inspection February 12 - 15, 2018
submitted	3. MFDS, Korea GMP certificate
	4. US FDA EIR Form 483 and its complete responses submitted with FDA; dates
	of inspection July 23-27, 2018
	5. List of APIs manufactured on site
	6. List of regulatory inspection
	7. Copy of manufacturing authorization (Manufacturing license) issued by Drugs
	Control Department Form 25 KTK/25/500/2005 (VIDE ref. No DCD/MFG/SR-
	156/18-19, valid till March30, 2023
	8. Copy of GMP certificate issued by Drugs Control Department No DCD/SPL1/CR-
	660-2020-21, GSC No: DD011S200000031 valid till September 23, 2021
	9. SMF, annexes and drawings
	10. PQRs for the following products covering the period between January 2019 –
	December 2019:
	i. Sofosbuvir
	ii. Artemether
	iii. Artesunate (Micronized)
	iv. Artesunate (Non-micronized)
	v. Lumefantrine
	vi. Praziquantel
	11. BMRs and analytical raw data:
	i. Artemether
	ii. Artesunate (Non-micronized)
	iii. Artesunate (Micronized)
	iv. Praziquantel
	12. Information about recovered solvents
	13. Master BMRs and BPRs:
	i. Sofosbuvir
	ii. Artemether
	iii. Oseltamivir monophosphate
	iv. Artesunate (Non-Micronized)
	v. Artesunate (Micronized)
	vi. Praziquantel
	vii. Lumefantrine
	viii. Zidovudine
	14. Declaration: recalls
	15. Declaration: self-inspection
	16. Declaration: sartans
	17. Declaration: recovered solvents
	18. Declaration on Nitrosamines
	19. Declaration: warning letters
	20. Declaration: out-of-stock
	21. Declaration: upcoming inspections
	22. Information: table to specify which parts of the manufacturing process for the
	concerned products were covered by the inspection of the competent SRA authorities
Any doormanta	performed in the last 3 years
Any documents	None
missing?	

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Part 2	Summary of SRA/NRA inspection evidence considered (from most recent to last)		
	and commentsDates of inspection:17 – 21 February 2020		
US FDA, USA	·		
	Type of inspection:	Compliance Program Active Pharmaceutical	
	Dla ala/Ula it/Wa alaala aa	Ingredient (API) Process Inspection	
	Block/Unit/Workshop:	Plant -1, Plant - 2 and Plant - 3	
	APIs covered:	1. Albendazole	
		<ol> <li>Artesunate</li> <li>Colchicine</li> </ol>	
		<ol> <li>Colonicine</li> <li>Hydralazine Hydrochloride USP</li> </ol>	
		5. Methoxsalen USP	
		6. Oseltamivir Phosphate USP	
		7. Praziquantel	
		8. Succinyl Choline Chloride USP	
Part 3	Summary of the last WHO inspec		
Date and	· ·	was carried out 12 -15 February 2018. At the time of	
conclusion of	the inspection the name of the site v	vas "Sequent Scientific Ltd".	
most recent WHO inspection	Initial conclusion of the inspection:		
wito inspection	Initial conclusion of the inspection: Based on the areas inspected, the per	ople met and the documents reviewed, and considering	
	1 / 1	ding the observations listed in the Inspection Report a	
		ent Scientific Ltd, located at 120 A&B, 36, 120P & 121,	
	Industrial Area, Baikampady, New Mangalore -575011, Karnataka, India with WHO good		
	manufacturing practices for active pharmaceutical ingredients will be made after the		
	manufacturer's response to the observations has been assessed.		
		and the all defining income differences include a description	
	The manufacturer is expected to respond to all deficiencies and for each include a description of the corrective action implemented or planned to be implemented, and the data of		
	of the corrective action implemented or planned to be implemented, and the date of completion or target date for completion. In addition, for deficiencies classified as "major"		
	completion or target date for completion. In addition, for deficiencies classified as "major", supporting documentation should be submitted with the response as objective evidence of		
		The acceptability of corrective actions will be assessed	
	through evaluation of the response	to each observation and will be followed up during the	
	next inspection.		
	CAPAs were evaluated by inspecto	rs and the inspection was closed 1 May 2018	
	Final conclusion:		
		taken, to correct the deficiencies have been reviewed by	
	The actions taken, or proposed to be taken, to correct the deficiencies have been reviewed by the Prequalification Inspection Group.		
	In general, they are considered acceptable and their satisfactory implementation will be		
	verified during future inspections.		
		oup has recommended that the manufacturing of the	
	APIs:	A D1	
	Artemether- manufactured     Ocaltaministree manufactured		
		e – manufactured at Plant-2 & 3 – manufactured at Plant- 3	
	<ul> <li>Artesunate non micronized – manufactured at Plant- 3</li> <li>Artesunate micronized - manufactured at Plant- 3</li> </ul>		
	<ul> <li>Artesunate interonized - manufactured at Plant- 3</li> <li>Lumefantrine - manufactured at Plant- 3</li> </ul>		
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	• Zidovudine – manufactured at Plant 2		
	• Praziquantel - manufactured at Plant- 3		
	• Sofosbuvir – manufactured at Plant-2 & 3		
	• Ledipasvir- manufactured at Plant-2 & 3		
	can be considered to be compliant with the standards of Good Manufacturing Practic		
	(GMP) for APIs published by the World Health Organization (WHO), for the scope		
	activities listed below:		
	• Manufacture and packaging of intermediates and active pharmaceutical		
	ingredients		
Brief summary	Manufacturing, packaging, labelling, testing and storage of intermediates and active		
of	pharmaceutical ingredients		
manufacturing			
activities as of			
February 2018			
General	Sequent Scientific Limited was incorporated in 1995 and is engaged in the development and		
information	manufacture of API and intermediates used in finished pharmaceutical products. Sequent		
about the	have facilities at Mangalore and Mysore in Karnataka, at Tarapur and Mahad in Maharashtra		
company	and at Vizag in Andhra Pradesh, India.		
and			
manufacturing	The Mangalore facility is ISO: 14001 certified and has 3 production blocks:		
site as of February	• Plant-1 used for manufacturing of intermediates		
2018	• Plant-2 and Plant-3 used for the manufacture of APIs.		
Focus of the last	Artemether-manufactured at Plant-2 & 3		
WHO inspection	Oseltamivir monophosphate – manufactured at Plant-2 & 3		
	Artesunate non micronized – manufactured at Plant- 3		
	Artesunate micronized - manufactured at Plant- 3		
	Lumefantrine - manufactured at Plant- 3		
	Zidovudine – manufactured at Plant 2		
	Praziquantel - manufactured at Plant- 3		
	Sofosbuvir – manufactured at Plant-2 & 3		
	Ledipasvir- manufactured at Plant-2 & 3		
Areas inspected	Pharmaceutical Quality System		
	Documentation system		
	Production System		
	Facilities and Equipment System		
	Laboratory Control System		
	Packaging and labelling system		
Out of scope	APIs out of scope of PQ		
and restrictions			
(last WHO			
inspection)			
WHO APIs	Artemether-manufactured at Plant-2 & 3		
covered by the	Oseltamivir monophosphate – manufactured at Plant-2 & 3		
last WHO	Artesunate non micronized – manufactured at Plant- 3		
inspection	Artesunate micronized - manufactured at Plant- 3		
	Lumefantrine - manufactured at Plant- 3		
	Zidovudine – manufactured at Plant 2		
	Praziquantel - manufactured at Plant- 3		

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	Sofosbuvir – manufactured at Plant-2 & 3		
Ledipasvir- manufactured at Plant-2 & 3			
Additional	None		
products to be			
covered by this			
desk			
assessment:	assessment:		
Abbreviations	Meaning		
APQR	Annual product quality review		
BMR	Batch manufacturing record		
BPR	Batch production record		
CAPA	Corrective and preventive action		
CC	Change control		
EIR	Establishment inspection report		
GMP	Good manufacturing practices		
PW	Purified water		
SOP	Standard operating procedure		

a) Manufacturing authorization and GMP certificate granted by the local authority: Licence: Form 25 KTK/25/500/2005 (VIDE ref. No DCD/MFG/SR-156/18-19, valid till March30, 2023 GMP certificate: No DCD/SPL1/CR-660-2020-21, GSC No: DD011S200000031 valid till September 23, 2021

Summary of the assessment of supporting documentation

#### b) Site master file (SMF):

Part 4

SMF submitted and reviewed. SMF written according to the WHO TRS No. 961, Annex 14

# c) List of all the APIs or other products (intermediates, dosage forms) manufactured on-site:

In total 48 APIs are manufactured on-site within the following Therapeutic categories:

- 1. Antipsoriatics
- 2. Anthelmintic
- 3. Antimalarial
- 4. Phosphorus supplementation
- 5. Psychostimulants
- 6. Antihyperparathyroid
- 7. Antiretroviral
- 8. Aesthetic
- 9. Anti-inflammatory
- 10. Antihypertensive
- 11. Antiviral
- 12. Selenium Supplement
- 13. Chemo Adjuvant
- 14. NSAID
- 15. Anti-psoriasis
- 16. Antifungal
- 17. Muscle relaxant
- 18. Anaesthesia



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- 19. Hyperammonaemia
- 20. Hepatitis B
- 21. Anticoagulant
- 22. Hepatitis C
- 23. Antiprotozoal
- 24. Cardiovascular Agent
- 25. Amyotrophic Lateral Sclerosis (ALS)
- 26. Anti-gout
- 27. Anxiolytic
- 28. Nutritional supplements
- 29. Food Supplement

### d) List of all regulatory inspections performed in the last 3 years and their outcomes:

S. No	Name of regulatory Authorities (National)	Inspection dates	Inspected Substance
1.	Drug control department for the state of Karnataka, India	August 2018	GMP Inspection and Marketing Authorisation (Manufacturing licence)
		August 2020	GMP Inspection
2.	Central Drug Standard Control Organization, India	August 2018	GMP Inspection and Marketing Authorisation (Manufacturing licence)
		January 2019	GMP Inspection
		August 2020	GMP Inspection

S. No.	Name of regulatory Authorities (International)	Inspection dates	Inspected Substance
1.	USFDA, USA	23rd to 27th July 2018	Hydralazine Hydrochloride, Oseltamivir Phosphate, Praziquantel, Albendazole, Mesna, Colchicine
		17th to 21st February 2020	Albendazole, Artesunate, Colchicine, Hydralazine Hydrochloride USP, Methoxsalen USP, Oseltamivir Phosphate USP Praziquantel, Succinyl choline chloride USP

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2.	EDQM	06th to 08 September 2017	Succinyl choline chloride. (Suxamethonium chloride)	
3.	AEMPS, Spain	06th to 08th September 2017	Succinyl choline chloride. (Suxamethonium chloride)	
4.	KFDA, Korea	16th to 18 July 2018	Oseltamivir Phosphate	

# e) Most recent product quality reviews (PQR)s of the concerned WHO APIs:

Reviewed: PQRs contained required information and CAPAs.

- 1. Praziquantel
- 2. Artemether
- 3. Artesunate
- Checked:
  - 1. Lumefantrine
  - 2. Sofosbuvir

*Note:* the company declared that Oseltamivir phosphate and Zidovudine APIs have not been manufactured for the past 5 years, therefore no PQRs submitted.

# f) Batch manufacturing records including the analytical part, for the most recently released batch of relevant APIs:

Reviewed:

- i. Artemether
- ii. Artesunate (Non-micronized)
- iii. Artesunate (Micronized)
- iv. Praziquantel

*Note*: the company declared that Oseltamivir phosphate and Zidovudine were not manufactured for the past 9 years with Sofosbuvir and Lumefantrine last manufactured in 2016, therefore BMRs and analytical raw data were not submitted.

# g) Master batch manufacturing and packaging record(s) of the API(s) of interest:

Checked:

- i. Sofosbuvir
- ii. Artemether
- iii. Oseltamivir monophosphate
- iv. Artesunate (Non-Micronized)
- v. Artesunate (Micronized)
- vi. Praziquantel
- vii. Lumefantrine
- viii. Zidovudine

#### **h)** Recalls in the past three years related to APIs with quality defects: Declaration submitted: no recalls related to APIs with quality defects

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- i) Confirmation by the senior quality assurance representative that a full self-inspection or external audit dedicated to the API(s) has been performed and all matters dealt with: Declaration submitted that a full self-inspection or external audit dedicated to the API(s) has been performed and all matters dealt with accordingly.
- j) Copy of any warning letter, or equivalent regulatory action, issued by any authority for their market, to which the site provides or has applied to provide the API(s):
   Declaration submitted: no warning letter, or equivalent regulatory action, issued by any authority

# k) Out-of-stock situations: Declaration submitted: no out-of-stock situation

#### **I)** Additional information submitted:

- 1. Declaration: no "Sartan" products being manufactured at Solara Active Pharma Sciences Limited, located at 120 A & B, 36, 120P & 121 Industrial Area Baikampady, New Mangalore, Karnataka
- 2. Declaration: recovered solvents are used only in the manufacture of Artesunate, Praziquantel and Lumefantrine. The recovery solvents / reagents are not employed in other listed products.

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Based on the previous WHO inspection and desk assessment and on the GMP evidence received and reviewed, it is considered that a desk assessment is acceptable in lieu of a WHO onsite inspection. The site *Solara Active Pharma Sciences Limited, Plants 1&2&3*, located at *120A &B*, *36*, *120P & 121 Industrial Area, Baikampady, New Mangalore - 575011, Karnataka, India* is considered to be operating at an acceptable level of compliance with WHO GMP guidelines for APIs.

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

Part 6	List of guidelines referenced in this inspection report
	• • • • • • • • • • • • • • • • •

- WHO good manufacturing practices for active pharmaceutical ingredients. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-fourth Report. Geneva, World Health Organization, 2010 (WHO Technical Report Series, No. 957), Annex 2. Short name: WHO GMP for APIs or WHO TRS No. 957, Annex 2 http://apps.who.int/medicinedocs/documents/s20119en/s20119en.pdf
- WHO good manufacturing practices for pharmaceutical products: main principles. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-eighth 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/
- WHO good manufacturing practices: water for pharmaceutical use. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fourth-sixth 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/greas/quality\_safety/quality\_assurance/expert\_committee/trs\_970

http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/trs\_970/en/



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- 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
- 5. 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 (WHO Technical Report Series, No. 1010), Annex 8. Short name: WHO TRS No. 1010, Annex 8 http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/trs\_1010/en/
- 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 <u>http://whqlibdoc.who.int/trs/WHO\_TRS\_937\_eng.pdf?ua=1</u>
- 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 <u>http://www.who.int/medicines/publications/44threport/en/</u>
- 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 (WHO Technical Report Series, No. 957), Annex 3.
   Short name: WHO TRS No. 957, Annex 3 <u>http://www.who.int/medicines/publications/44threport/en/</u>
- 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 <u>http://whqlibdoc.who.int/trs/WHO\_TRS\_961\_eng.pdf?ua=1</u>
- 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 <u>http://whqlibdoc.who.int/trs/WHO\_TRS\_961\_eng.pdf?ua=1</u>
- 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



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- 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 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 <u>http://whqlibdoc.who.int/trs/WHO\_TRS\_961\_eng.pdf?ua=1</u>
- 14. 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 <u>http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/trs\_981/en/</u>
- 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 (WHO Technical Report Series, No. 981), Annex 3. Short name: WHO TRS No. 981, Annex 3 <u>http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/trs\_981/en/</u>
- 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 (WHO Technical Report Series, No. 961), Annex 14. Short name: WHO TRS No. 961, Annex 14 <u>http://whqlibdoc.who.int/trs/WHO TRS 961 eng.pdf?ua=1</u>
- WHO Guidelines on good manufacturing practices: validation, Appendix 7: non-sterile process validation. WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-ninth Report Geneva, World Health Organization, 2015 (WHO Technical Report Series, No. 992), Annex 3.
   Short name: WHO TRS No. 992, Annex 3
   <u>http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/WHO\_TRS\_992\_web.pdf</u>
- 18. WHO General guidance on hold-time studies WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-ninth Report Geneva, World Health Organization, 2015 (WHO Technical Report Series, No. 992), Annex 4. Short name: WHO TRS No. 992, Annex 4 <u>http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/WHO\_TRS\_992\_web.pdf</u>
- 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
   <a href="http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/WHO\_TRS\_992\_web.pdf">http://www.who.int/medicines/areas/quality\_safety/quality\_assurance/expert\_committee/WHO\_TRS\_992\_web.pdf</a>



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