WHO Prequalification of In Vitro Diagnostics Programme
PUBLIC REPORT

Product: CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO
Number: PQDx 0138-049-00

Abstract

CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO labelled as CareStart™ Malaria Pf/Pv (HRP2/pLDH) Ag RDT from October 2015 with product codes **RMVM-02571 and RMVM-05071 (old product code G0161)**, manufactured by Access Bio, Inc., **Rest-of-world** regulatory version, was accepted for the WHO list of prequalified in vitro diagnostics and was listed on 28 May 2015.

For the rapid qualitative detection of malaria HRP2 (histidine-rich protein 2) of *P.falciparum* and pLDH (plasmodium lactate dehydrogenase) of *P.vivax* in human whole blood as an aid in the diagnosis of malaria infection.

CareStart™ Malaria HRP2/pLDH (Pf/Pv) Combo contains a membrane strip, which is pre-coated with two monoclonal antibodies as two separate lines across the test strip. One monoclonal antibody (test line "Pv") is specific to pLDH of the *P.vivax*, and the other line (test line "Pf") consists of a monoclonal antibody specific to HRP2 of the P.falciparum. The conjugate pad is dispensed with antibodies absorbed on gold particles, which are specific to pLDH of *P.vivax* and HRP2 of *P .falciparum*.

CareStart™ Malaria HRP2/pLDH (Pf/Pv) Combo is designed for the differentiated diagnosis of *P.falciparum* and *P.vivax* infection.

Other clinically available tests are required if the obtained results are questionable. A definitive clinical diagnosis should not be made based on the result of this test, but should only be made by a qualified physician after all clinical and laboratory findings have been evaluated.

The test kit contains:

	25T/kit Product code RMVM-02571	**50T/kit Product codeRMVM-05071**
Test devices	25	50
Assay buffer	1 bottle (x4 ml)	1 bottle (x6 ml)
Sample pipette	25	50
Lancet	25	50
Alcohol swab	25	50

Instructions for Use	1	1

Storage:
The test kit should be stored at 1 to 40 °C.

Shelf-life:
24 months.

Reading time:
20 minutes.

Summary of prequalification status for CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO

	Initial acceptance	
	Date	**Outcome**
Status on PQ list	28 May 2015	listed
Dossier assessment	14 April 2015	MR
Inspection status	14 January 2015	MR
Laboratory evaluation	2013	MR

MR: Meets Requirements
NA: Not Applicable

CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO was accepted for the WHO list of prequalified in vitro diagnostics on the basis of data submitted and publicly available information.

Background information

Access Bio, Inc. submitted an application for prequalification of CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO. Based on the results of the WHO product testing of malaria RDTs Round 4, CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO was given priority for prequalification.

Product dossier assessment

Access Bio, Inc. submitted a product dossier for CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO as per the Instructions for compilation of a product dossier (PQDx_018 v1). The information submitted in the product dossier was reviewed by WHO staff and external experts (assessors) appointed by WHO in accordance with the internal report on the

screening and assessment of a product dossier (PQDx_009 v2). Based on the product dossier screening and assessment findings, a recommendation was made to accept the product dossier for CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO for prequalification.

Commitments for prequalification:
The manufacturer committed to amend and submit additional documentation on the following issues:

1. The Manufacturer has committed to supply the products with the revised labelling, instructions for use (IFU) and new catalogue numbers as soon as current stock of old boxes and IFUs has been depleted (October 2015). The manufacturer will ensure that exact names are used consistently throughout all labels and IFUs for each of the various products.

2. The Manufacturer has committed to arrange a reproducibility study in Ethiopia and Nigeria in field conditions. Results should be submitted to PQ within one month of completion.

3. The manufacturer will submit results of additional ongoing stability studies/results (Claimed shelf life and 7.2.2. In use stability). These should be submitted to PQ within one month of completion.

Manufacturing site inspection

A comprehensive inspection was performed at the site of manufacture (65 Clyde Road Suite A, Somerset NJ, USA) of CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO in July, 2014 as per the Information for manufacturers on prequalification inspection procedures for the sites of manufacture of diagnostics (PQDx_014 v1). The inspection found that the manufacturer had an acceptable quality management system and good manufacturing practices in place that ensured the consistent manufacture of a product of good quality. The manufacturer's responses to the nonconformities found at the time of the inspection were accepted 14 January 2015.

Commitments for prequalification:
1. Information of the finalized factory renovation
2. Implementation of quality control regime for all Malaria species

Laboratory evaluation

The fourth round of WHO product testing of RDTs for malaria antigen detection was completed in 2012. The product was evaluated against a Plasmodium falciparum cultured line panel, *P. falciparum* wild type parasite panel, *P. vivax* wild type parasite panel and a *P. falciparum* negative panel. Thermal stability was assessed after 2 months of storage at elevated temperature and humidity, and a descriptive ease of use assessment was recorded.

Based on the demonstrated *P. falciparum* panel detection score (90.8% at 200 parasites/µl), P. vivax panel detection score (94.1% at 200 parasites/µl), false-positive rates (0% for clean negatives, 0.3% for P. falciparum at 200 parasites/µl, 0%% for *P. vivax* at 200 parasites/µl, 1.0% for *P. falciparum* at 2000 to 5000 parasites/µl, 1.5% for *P. vivax* at 2000 to 5000 parasites/µl) and invalid rate (0%), CareStart™ Malaria HRP2/pLDH (Pf/Pv) COMBO meets the current laboratory evaluation requirements for prequalification.

Labelling

1. **Labels**
2. **Instructions for use**

In accordance with the commitment to PQ to provide updated labels and instructions for use by October 2015, the revised labelling will be provided in this public report at time of implementation.