

## PROTEIN DATASHEET

PROTEIN NUMBER	PROTEIN NAME	EXPRESSION HOST
2016-1278	Histidine-rich protein 2 ITG (Purified recombinant HRP2 from <i>P. falciparum</i> strain ITG)	<i>Escherichia coli</i>

### GENERAL INFORMATION

Construct Design	: HRP2_ITG (GenBank: AAC47453.1) was expressed with a polyhistidine tag followed by a thioredoxin tag and a Human Rhinovirus 3C protease cleavage site at the N-terminus. Full length: 380 amino acids Primary sequence length: 253 amino acids
Theoretical Molecular Mass	: 40.37 kDa
Theoretical pI	: 6.28
Cell Strain	: <i>BL21(DE3)</i>
Protein Description	: The ITG strain of <i>Plasmodium falciparum</i> is a globally recognised reference lineage, originally derived from Brazilian isolates. In contrast to strains used purely for drug resistance profiling, the ITG strain is the primary model for studying parasite sequestration and cytoadherence. The HRP2 protein secreted by this strain serves as a vital biomarker for monitoring the metabolic activity and density of parasites that exhibit specific binding affinities to human vascular receptors.
Application	: A wide range of assays, such as enzymatic assay, immunoassay, and protein-protein interaction assay. Note: The optimal working dilution should be determined by the user.
Restriction	: This product is for research use only. It is not intended for use in humans.

### FORMULATION AND STORAGE

Form	: Liquid
Purity	: >75% as determined by SDS-PAGE
Protein Concentration	: 0.39 mg/mL (Lot specific)
Storage Buffer	: Phosphate Buffer Saline + 5% Glycerol

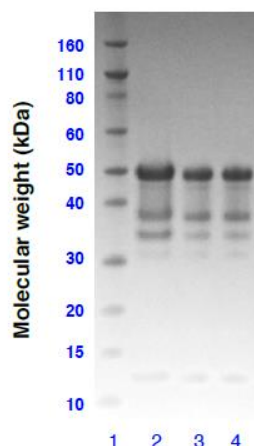
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- |                    |   |  |
|--------------------|---|--|
| Storage Condition  | : | For longer-term storage, aliquot in small volumes and store at -80°C. Repeated freeze-thaw cycles are not recommended. |
| Shipping Condition | : | Shipped on dry ice. Stored at -80°C upon receipt.  |

**COMPREHENSIVE QUALITY CONTROL**

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|-------------------|---|--|
| Protein Purity    | : | Determined by SDS-PAGE   |
| Protein Identity  | : | Determined by PMF  |
| Protein Stability | : | Freeze-thaw stability by SDS-PAGE<br>Protein unfolding and aggregation onset temperature determined by differential scanning fluorimetry |

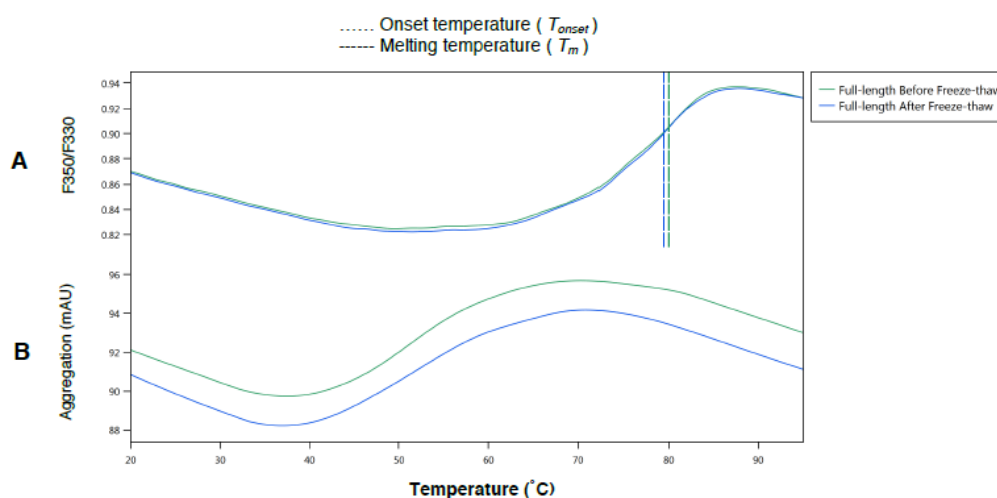
## QUALITY CONTROL DATA

### SDS-PAGE and Peptide Mass Fingerprinting (PMF)



- **Lane 1:** MW ladder / **Lane 2:** HRP2 ITG / **Lane 3:** HRP2 ITG filtered / **Lane 4:** HRP2 ITG freeze-thaw
- The protein was determined to have a purity of 75% and was identified as HRP2\_ITG by PMF.

### Nano Differential Scanning Fluorimetry (NanoDSF)



- NanoDSF analysis shows a thermal stability profile (A) and aggregation analysis (B) as expected for this protein.

*Recipients using HRP2 ITG from The Protein Expression Facility must acknowledge the facility's contribution in written publications and/or oral presentations. The author/s acknowledge the facilities and the scientific and technical assistance of the Protein Expression Facility (PEF) at The University of Queensland.*