

## Product Specification Sheet

### Merozoite surface protein-1 (MSP-1; P. falciparum Antibodies and Protein controls

<input type="checkbox"/> <b>Cat. MSPF11-M</b>	Mouse Anti-Merozoite surface protein-1 (MSP-1; P. falciparum) IgG, Clone #1	<b>SIZE:</b> 100 ug
<input type="checkbox"/> <b>Cat. MSPF12-M</b>	Mouse Anti-Merozoite surface protein-1 (MSP-1; P. falciparum) IgG, Clone #2	<b>SIZE:</b> 100 ug
<input type="checkbox"/> <b>Cat. MSPF11-C</b>	Recombinant MSP-1; P. falciparum protein control for Western blot	<b>SIZE:</b> 100 ul

Malaria is a mosquito-borne infectious disease caused by malaria parasite, Plasmodium. Each year, there are approximately 350–500 million cases of malaria, killing between one and three million people, the majority of whom are young children in sub-Saharan Africa. In humans malaria is caused by P. falciparum, P. malariae, P. ovale, P. vivax and P. knowlesi. P. falciparum is the most common cause of infection. Parasitic Plasmodium species also infect birds, reptiles, monkeys, chimpanzees and rodents. There have been documented human infections with several simian species of malaria, namely P. knowlesi, P. inui, P. cynomolgi, P. simiovale, P. brazilianum, P. schwetzi and P. simium; however, with the exception of P. knowlesi, these are mostly of limited public health importance.

Merozoite surface protein 1 (MSP-1) of the malaria parasite is an important molecule involved in invasion of erythrocytes. In Plasmodium falciparum, MSP-1 is synthesized as a large precursor on the surfaces of merozoites. Proteolytic cleavage of MSP-1 leaves a C-terminal 19-kDa fragment (MSP-119) on the surface of the parasite, which is necessary for invasion of the erythrocyte. The remaining fragments are shed as a soluble complex. The C-terminal MSP-119 region is functionally conserved across species of the genus Plasmodium, and its tertiary structure is maintained by disulfide bridges. Immunization with MSP-119 of P. falciparum MSP-1, or its equivalent in rodent parasites, is able to generate protective immunity, and development of MSP-1 as a potential vaccine has, therefore, concentrated on this region of the molecule.

#### Source of Antigen and Antibodies

<b>Antigen</b>	Recombinant MSP-1 (MSP1/MSP-I) protein (P. falciparum) #MSP15-R
<b>Ab Host/type</b>	Mouse, Monoclonal, IgG1, Aff pure IgG1 ( <b>cat # MSPF11-M</b> ) and <b># MSPF12-M</b> (IgG1 in PBS, pH 7.5 containing 0.01% proclin-300,
<b>2-ab</b>	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
<b>-ve control IgG</b>	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control

MSP-1 (P. falciparum; mature 108-aa) was expressed as His-tag protein and purified (>95%). For Western blot +ve control (**Cat # MSPF11-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **MSPF11-C** for good visibility with antibody Cat # **MSPF11-M** or MSPF12-M or other antibodies. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **MSPF11-C** solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

#### Form & Storage

##### Affinity pure IgG

Buffer: PBS pH 7.4 and 0.01% proclin-300

**Reconstitute powder** in water

##### Storage

**Short-term:** unopened, undiluted liquid vials for less than a week at 4oC.

**Long-term:** at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 12 months at –20oC or below.

**Shipping:** 4oC for solutions and room temp for powder.

#### Recommended Usage

**Western Blotting** (1-3 ug/ml using ECL.

**ELISA** (0.1-1 ug/ml indirect ELISA or to at 1-10 ug/ml in ELISA.

**Histochemistry & Immunofluorescence:** not tested.

#### Specificity & Cross-reactivity

Mouse antibody to MSP-1 (p. falciparum) reacts with MSP1 in ELISA and Western. No significant reactivity is observed with other plasmodium proteins. Recombinant MSP1 from P. falciparum (#MSPF15-R) and P. vivax (#MSPV16-R) are available. Ready to use western blot positive control for MSP-1 from P. falciparum (#MSPF11-C) can also be used for western.

**General References:** Ahlborg N (200) 68, 2102-2109; Blackman M (1990) J. Exp. Med. 172, 379-382; Blackman M (1991) Mol. Biochem. Parasitol. 49, 29-34; Bzik DJ (1993) Mol Biochem. Parasitol. 59, 155-156; Vander DL (1981) Mol Biochem. Parasitol. 4, 255-264; Iqbal J (2004) J. Clin. Microbiol. 42, 4237-4241;

\*This product is for in vitro research use only.

#### Related material available from ADI

Catalog#	ProdDescription
RP-649	Recombinant Malaria Protein HSP
RP-650	Recombinant Malaria Cs Mosaic
SP-88358-1	MSP-1 P2, Malaria Merozoite Surface
CSPF16-R	Recombinant (E. coli) Circumsporozoite
	(CSP) mosaic protein (107-129, 334-351 aa) (P.falciparum)
HRPF21-M	Mouse Anti-Histidine rich glycoprotein II
	(HRP II, P. falciparum) IgG, aff pure #1
HRPF25-R	Recombinant (E. coli) merozoite surface
	protein-1 (MSP-1; P. falciparum)
MSPF25-R	Recombinant (E. coli) merozoite surface
	protein-2 (MSP-2; P. falciparum)
MSPV14-M	Mouse Anti-Merozoite surface protein-1
	(MSP-1; P. vivax) IgG, aff pure #1
MSPV16-R	Recombinant (E. coli) merozoite surface
	protein-1 (MSP-1; 108-aa; P. vivax)
MSPV26-R	Recombinant (E. coli) merozoite surface
	protein-2 (MSP-2; 460-aa; P. vivax)
MSPF11-M	130724A