ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

P. falciparum circumsporozoite protein (CSP)

□ Cat. # CSPF17-R-10	Recombinant Circumsporozoite (CSP; 207-397 aa) His-tag protein, P.falciparum)	**SIZE**: 10 μg
□ Cat. # CSPF17-R-100	Recombinant Circumsporozoite (CSP; 207-397 aa) His-tag protein, P.falciparum)	**SIZE**: 100 μg

Malaria is a severe and debilitating disease caused by the parasitic protozoan *Plasmodium*, which is transmitted by many species of anopheline mosquitoes. *P. falciparum* is the most widespread and also the most serious and potentially fatal form of *Plasmodium* species. Recent estimates of the annual number of clinical malaria cases worldwide range from 214 to 397 million. Estimates of annual mortality (nearly all from *P. falciparum* malaria) are thought to be around 1.1 million. The life cycle of the malaria is complex, with phases both in human host and the insect vector, the female anopheline mosquito. There are several *Plasmodium* forms: sporozoites, merozoites, gametocytes, gamets, ookinets, oocysts. Parasite may encode in the order of 2000 proteins, several hundred of which are antigenic.

The development of a malaria vaccine is one of the highest priorities in infectious disease research, as such a vaccine could be enormously helpful in reducing the 500 million new Plasmodium infections and over 1 million deaths due to malaria annually.
Current approaches to malaria vaccine development can be classified according to the different stages in which the parasite can exist. Three types of possible vaccines can be distinguished: 1. **Pre-erythrocytic vaccines**, which are directed against sporozoites and/or schizont-infected cells. These types of vaccines are primarily circumsporozoite (CS)-based. 2. **Asexual blood-stage vaccines**, which are designed to minimize clinical severity. 3. **Transmission-blocking vaccines**, which are designed to hamper the parasite development in the mosquito host.

The circumsporozoite protein-1 (CSP-1), an approximate 60 kDa protein located on the surface of developing and mature sporozoites and present in developing exoerythrocytic forms is the best-characterized protein of sporozoites. It constitutes the major surface protein of the sporozoite and is a multifunctional molecule that plays a crucial role at various points of the malaria life cycle. The CSP-1 is synthesized as a precursor protein of 67 kDa, which is processed by removal of approximately 50-100 residues to generate the mature protein of 58 kDa. The central domain of CSP-1 is composed of an extensive array of tandemly repeated short sequences. For the CSP-1 of the 7G8 cloned line of *P. falciparum*, this region is composed of 37 copies of NANP, interspersed with 4 copies of NVDP. There are the major repeat region and the minor repeat region in the *P. falciparum* CS protein. P. falciparum CSP C-Terminus fragment (aa 207-397) contains 16 copies of NANP.

Source of Antigen and Antibodies

The optimized cDNA sequence coding the P. falciparum CSP C-terminus fragment (aa 207–397) was subcloned into pET28 vector. This fragment including 6xHis and T7 Tags was expressed and purified. Purified P. falciparum CSP C-terminus fragment (cat # CSPF17-R) is formulated 50 mM Tris, 0.5 M NaCl, 10 mM b-ME, 0.5 mM EDTA and supplied in this buffer or lyophilized in the same buffer (see lot sp conc on the vial). Purified #CSPF17-R is ~ 31 kDa and is > 95% pure.

Store frozen in suitable aliquots.

Purified peptide
□ 10 μg/vial □ solution □ lyophilized powder

Reconstitute powder in water appropriate buffer in at least 100 μg/ml

Storage

Short-term: unopened, undiluted liquid vials at -20^{O}C and powder at 4^{O}C or -20^{O}C.

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

Stability: 6-12 months at –20^{O}C or below.

Shipping: 4^{O}C for solutions and room temp for powder.

General References: Coppel R.L. et al (1994), in Immunochemistry, edited by Van Oss C.J., Van Regenmortel M.H.V., published by CRC Press, 475-532; Lal A.A. et al (2002), in Malaria Immunology, edited by Perlmann P., Troye-Blomberg M., published by Karger Publishers, 27-49; Aley S.B. et al (1987) J. Parasit, 73, 1241-1245; Frevert U. et al (1998) The EMBO Journal, 17, 3816–3826.

**This product is for In vitro research use only.*

Related Items
ELISA Kits to detect antibodies to various malaria proteins (vaccines)

Catalog# ProdDescription
970-200-CSR Rabbit Anti-Circumsporozoite protein (CSP, P falciparum/RTS,S vaccine) IgG ELISA kit, 2x96 tests
970-210-CSM Rabbit Anti-Circumsporozoite protein (CSP, P falciparum/RTS,S vaccine) IgM ELISA kit, 2x96 tests
970-300-MMG Mouse Anti-Circumsporozoite protein (CSP, P falciparum/RTS,S vaccine) IgG ELISA kit ELISA kit, 2x96 tests
970-300-SMG Monkey (simian) Anti-Malaria IgG ELISA kit, 2x96 tests
970-310-MMM Mouse Anti-Circumsporozoite protein (CSP, P falciparum/RTS,S vaccine) IgM ELISA kit ELISA kit
970-320-MSG Mouse Anti-Merozoite surface protein-1 (MSP-1; P. falciparum/malaria vaccine) IgG ELISA kit, 2x96 tests
970-330-MSM Mouse Anti-Merozoite surface protein-1 (MSP-1; P. falciparum/malrai vaccine) IgM ELISA kit, 2x96 tests
970-340-RMG Rabbit Anti-Merozoite surface protein-1 (MSP-1; P. falciparum/malaria vaccine) IgG ELISA kit, 2x96 tests
970-350-RMM Rabbit Anti-Merozoite surface protein-1 (MSP-1; P. falciparum/malaria vaccine) IgM ELISA kit, 2x96 tests
970-360-HMG Human Anti-Merozoite surface protein-1 (MSP-1; P. falciparum/malaria vaccine) IgG ELISA kit, 2x96 tests
970-370-HMM Human Anti-Merozoite surface protein-1 (MSP-1; P. falciparum/malaria vaccine) IgM ELISA kit, 2x96 tests
970-400-CHG Human Anti-Circumsporozoite protein (CSP, P falciparum/RTS,S vaccine) IgG ELISA kit, 2x96 tests
970-410-CHM Human Anti-Circumsporozoite protein (CSP, P falciparum/RTS,S vaccine) IgM ELISA kit, 2x96 tests

CSPF17-R 121203A

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