ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

P. falciparum circumsporozoite protein (CSP)

□ Cat. # CSPF16-R-10 Recombinant (CSP) mosaic protein (107-129, 334-351 aa) (P.falciparum) **SIZE**: 50 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 E.Coli derived recombinant protein contains the Plasmodium Falciparum Csp Mosaic protein epitopes 107-129, 334-351amino acids (95% pure). It is formulated 150mM Imidazole, pH 8.0, 150mM NaCl, 25mM Sodium Phosphate and 50% glycerol.

Store frozen in suitable aliquots.

Purified peptide
□ 100 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.

Suggested Use:
ELISA at 1-10 ug/ml coating
Western: use 100-200 ng/protein/well

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.*

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