

Product Specification Sheet

**P. falciparum circumsporozoite protein (CSP) Protein antibodies and controls**

<input type="checkbox"/> Cat. # CSPF11-S	Rabbit Anti-CSP falciparum protein (CSP 207–397) antiserum	SIZE: 100 ul
<input type="checkbox"/> Cat. # CSPF11-C	Recombinant purified CSP (P. falciparum 207-397 aa) protein control for Western	SIZE: 100 ul

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. 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, gametes, ookinets, oocysts. Parasite may encode in the order of 2000 proteins, several hundred of which are antigenic. 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 58 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 central domain of CSP-1 is composed of an extensive array of tandemly repeated short sequences (37 copies of **NANP**, interspersed with 4 copies of **NVDP**). *P. falciparum* CSP C-Terminus fragment (aa 207-397) contains 16 copies of **NANP**.

**Source of Antigen and Antibodies**

<b>Antigen</b>	Recombinant purified His-tag fusion protein of <i>P. falciparum</i> CSP (aa 207–397)
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum (#CSPF11-S)
<b>2-Ab</b>	Cat # 20320, <b>goat anti-rabbit IgG-HRP</b> (AP, biotin, FITC conjugates also available).
<b>-ve control IgG</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

CSP protein was cloned and expressed in *E. coli*. Recombinant purified (>95%,) His-tag fusion protein of *P. falciparum* CSP C-terminus fragment (aa 207–397; mol wt~32 Kda). For Western blot +ve control (**Cat # CSPF11-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **CSPF11-C** for good visibility with antibody Cat # **CSPF11-S**. 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 **CSPF11-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.

**Storage**

**Short-term:** unopened, undiluted liquid vials at -20°C and powder at 4°C or -20°C.

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

**Stability:** 6-12 months at –20°C or below.

**Shipping:** 4°C for solutions and room temp for powder.

**Recommended Usage**

**Western Blotting** (1:200-1:2000) for neat serum using ECL technique).

**ELISA:** Control protein can be used to coat ELISA plates at 1-5 ug/ml and detected with antibodies (1:1000, 1:5,000) antiserum.

**Histochemistry & Immunofluorescence:** Not tested. .

**Specificity & Cross-reactivity**

*P. falciparum* CSP (207-397 aa) may share many regions, particularly the NANP and NVDP repeats in other malarial parasites. Anti-CSP207-397 react with the CSP protein form *P. falciparum*. Antibody cross-reactivity in various species has not been studied. Recombinant CSP207-397aa (*P. falciparum*) protein (#CSPF11-C) and (CSPF17-R) are available for control studies.

**General References:** Coppel R.L. (1994), in *Immunochemistry*, CRC Press, 475-532; Lal A.A. I (2002), in *Malaria Immunology*, 27-49; Aley S.B. (1987) *J. Parasit*, 73, 1241-1245; Frevert U. (1998) *EMBO Journal*, 17, 3816–3826.

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

**Related Items**

Mouse and Rabbit Antibodies Malaria Proteins (CSP, MSP, HPR, PLDH, SAGF) from *P. falciparum* and vivax. Mouse and rabbit Antibody ELISA kits for various vaccines against CSP, MSP etc, (NANP)<sub>x</sub>, (NVDP)<sub>x</sub>, (PAPPNAAND)<sub>x</sub>, and (PPPPNPPND)<sub>x</sub> peptides for malaria research.

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