

Product Specification Sheet

(NANP)₅, CSP repeat- peptide (P. falciparum) antibodies and peptide controls

Cat. # NANP51-A Rabbit Anti-(NANP)₅, CSP peptide IgG, aff pure

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. 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.

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. 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.

Naturally occurring antibody responses to the CS protein are directed against the repeat domains (a maximum of three copies of NANP compose the B epitope) and high titers of anti-repeat antibodies could protect mice, monkeys, and humans against sporozoite challenge. The repeat-sequence (NANP)-based B-cell epitope of the *P. falciparum* CS protein is an immunogenic but not immunodominant epitope. The CS-NANP-based pre-erythrocytic vaccines were the first to be tested. IgG antibody to (NANP)_n has been extensively used as a marker of exposure to malaria transmission in immune populations.

Source of Antigen and Antibodies

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|------------------------|--|
| Antigen | (NANP) ₅ peptide repeats of CSP (NANPNANPNANPNANPNANP, mot wt 2000); Designated (NANP51-P or control peptide) conjugated to KLH; |
| Ab Host/type | Rabbit, polyclonal Aff pure IgG (cat #NANP51-A) |
| 2-ab | Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available) |
| -ve control IgG | # 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control |

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in 100 ul water

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Supplied in **Buffer:** PBS pH 7.5,
Reconstitute powder in water at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

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

Stability: 6-12 months at -20oC or below.

Specificity

(NANP)₅ represents the major repeat region of *P. falciparum* CSP. In this CSP molecule 37 repeats of NANP are found.

Cat. # NANP51-BSA

NANP41-P peptide was coupled to BSA using a proprietary technique. It is supplied in PBS, pH 7.4, 0.1% azide in liquid (1 mg/ml) or lyophilized in PBS. Reconstitute the peptide in PBS at 1 mg/ml. Store in suitable aliquots at -20oC.

Suggested Usage

NANP51-P free peptide or NANP51-BSA conjugate can be used for ELISA or as an antigen.

Recommended Usage of antibody

Western Blotting (1:200:1:1000) for affinity pure antibody using Chemiluminescence technique.

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: not tested. we recommend the use of affinity purified antibody at 2-10 ug/ml in paraformaldehyde fixed sections of tissues.

General References: Del Giudice G. I (1990) Eur. J. Immunol., 20, 1619-1622; Reymond C.D. I (1993) JBC, 220, 12941-12947; Del Giudice G. (1987) Bulletin of WHO, 67, 515-523; Gerloni M. (2004) PNAS, 101, 3892-3897; Orlandi-Pradines E. I (2006) Am. J. Trop. Med. Hyg., 74, 979-985.

Related items:

| Cat. # | Description |
|-------------|--|
| NANP101-P | (NANP) ₁₀ repeat-sequence peptide |
| NVDP51-P, | (NANP) ₅ repeat-sequence peptide of <i>P.</i> |
| NVDP51-BSA | <i>falciparum</i> CSP/ its BSA conjugate |
| DRAA31-P, | (DRAAGQPAG) ₃ repeat-sequence peptide of |
| DRAA31-BSA | <i>P. vivax</i> CSP/ its BSA conjugate |
| DRAD31-P | (DRADGQPAG) ₃ repeat-sequence peptide of |
| | <i>P. vivax</i> CSP |
| PAPP31-P | (PAPPNAAND) ₃ repeat-sequence peptide of |
| | <i>P. berghei</i> CSP |
| PPPP312-P | (PPPPNPPND) ₃ repeat-sequence peptide of |
| | <i>P. berghei</i> CSP |
| PPPP321-P, | repeat-sequence peptide of <i>P. berghei</i> CSP/ |
| PPPP321-BSA | its BSA conjugate |

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

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