ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

$(NVDP)_4$, repeat-sequence peptide of the P. falciparum circumsporozoite protein (CSP) antibodies and peptide controls

□ Cat. # NVDP41-A	Rabbit Anti-$(NANP)_5$, CSP peptide IgG, aff pure	**SIZE**: 100 ul
□ Cat. # NVDP41-P	(NVDP)4 peptide control/blocking peptide	SIZE: 100 ug
□ Cat. # NVDP41-BSA	$(NVDP)_4$ peptide conjugated with BSA	SIZE: 0.5 mg

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, gamets, 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

Antigen	(NVDP)4 peptide repeats of CSP; **Designated (NVDP41-P or control peptide) conjugated to KLH;**
Ab Host/type	Rabbit, polyclonal Aff pure IgG (**cat #NVDP41-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. # NVDP41-BSA

NVDP41-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

NVDP41-P free peptide or NVDP41-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 Guidice G. I (1990) Eur. J. Immunol., 20, 1619-1622; Reymond C.D. I (1993) JBC, 220, 12941-12947; Del Guidice 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, NVDP51-BSA	(NANP)5 repeat-sequence peptide of P. falciparum CSP/ its BSA conjugate
DRAA31-P, DRAA31-BSA	(DRAAGQPAG)3 repeat-sequence peptide of P. vivax CSP/ its BSA conjugate
DRAD31-P	(DRADGQPAG)3 repeat-sequence peptide of P. vivax CSP
PAPP31-P	(PAPPNAAND)3 repeat-sequence peptide of P. berghei CSP
PPPP312-P	(PPPPNPPND)3 repeat-sequence peptide of P. berghei CSP
PPPP321-P, PPPP321-BSA	repeat-sequence peptide of P. berghei CSP/ its BSA conjugate

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

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