

## Product Specification Sheet

### (NVDP)<sub>4</sub>, repeat-sequence peptide of the *P. falciparum* circumsporozoite protein (CSP) antibodies and peptide controls

<input type="checkbox"/> Cat. # NVDP41-A	Rabbit Anti-(NANP) <sub>5</sub> , CSP peptide IgG, aff pure	<b>SIZE:</b> 100 ul
<input type="checkbox"/> Cat. # NVDP41-P	(NVDP) <sub>4</sub> peptide control/blocking peptide	SIZE: 100 ug
<input type="checkbox"/> Cat. # NVDP41-BSA	(NVDP) <sub>4</sub> 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, 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)<sub>n</sub> has been extensively used as a marker of exposure to malaria transmission in immune populations.

### Source of Antigen and Antibodies

<b>Antigen</b>	(NVDP) <sub>4</sub> peptide repeats of CSP; Designated (NVDP41-P or control peptide) conjugated to KLH;
<b>Ab Host/type</b>	Rabbit, polyclonal Aff pure IgG (cat #NVDP41-A)
<b>2-ab</b>	Goat Anti-rabbit IgG-HRP cat # 20320 (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

### 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 -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.

### Specificity

(NANP)<sub>5</sub> 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 -20°C.

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

NVDP41-A      121204A

### India Contact:

### Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444  
Email: [customerservice@lifetechindia.com](mailto:customerservice@lifetechindia.com) Website: [www.lifetechindia.com](http://www.lifetechindia.com)