ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

DRAA3, repeat-sequence peptide of the P. vivax circumsporozoite protein (CSP) peptide & antibodies

□ Cat. # DRAA31-P	DRAA3, peptide of the P. vivax CSP	SIZE: 100 ug
□ Cat. # DRAA31-BSA	DRAA3 peptide conjugated with BSA	SIZE: 0.5 mg
□ Cat. # DRAA31-A	Rabbit Anti-DRAA3 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. Four *Plasmodium* species, namely, *Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale* and *Plasmodium malariae* infect humans. *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. The development of a malaria vaccine is one of the highest priorities in infectious disease research.

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. The deduced sequence of the CSP of the human malaria parasite *Plasmodium vivax* consists of 373 amino acids with a central region of 19 tandem repeats of the nonapeptide Asp-Arg-Ala-Asp/Ala-Gly-Gln-Pro-Ala-Gly. (DRAD/AGQPAG). These tandem repetitions comprise the immunodominant epitope of the parasite. There are two variants of the nonapeptide: variant D, with Asp, and variant A, with Ala, in the fourth position.

Synthetic peptides reproducing a sequential array of DRA*D*GQPAG and DRA*A*GQPAG repeats of the *P. vivax* CS protein were investigated for their potential use in the detection of *P. vivax* sporozoite antibodies in human sera. The *P. vivax* repeat peptide (DRAAGQPAG)2 was employed for the stimulation of the CD4+ clones derived from a laboratory-born chimpanzee's T cell line secreted IFN-gamma and IL-2 .

Source of Antigen and Antibodies

Antigen	(DRA*A*GQPAG)3 peptide; **Designated (DRAA31-P or control peptide) conjugated to KLH;**
Ab Host/type	Rabbit, polyclonal Aff pure IgG (**cat # DRAA31-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.

Specificity

DRAA3 represents the central repeat region of P. vivax CSP. It shares 88% of identity with DRADGQPAG polypeptide of P. vivax CSP which it forms tandem repeats with.

Sources of Peptides

Cat. # DRAA31-P
Sequence: DRAAGQPAGDRAAGQPAGDRAAGQPAG
Mol. Wt: 2490
Formula: $C_{99}H_{161}N_{39}O_{37}$
Form: Powder
Solubility: not tested
Storage: Store powder at -20°C for up to 6 months.
After reconstitution in **water**, store solution in small aliquots at -20°C for 3-6 months. Do not freeze and thaw or store diluted solutions.

Cat. # DRAA31-BSA

DRAA31-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

DRAA31-P (free peptide) can be used for ELISA or as an antigen to obtain antibodies.

DRAA31-BSA can be used for ELISA in the concentration 1-10 ug/ml per coating.

General References: Nardin E. et al (1991) J. Immunol., 146, 1674-1678; Nardin E. et al (1995) Adv. Immunol., 60, 105-149; Pessi A. et al (1990) Am. J. Trop. Med. Hyg., 42, 17-23.

Related items:

NANP51-P, NANP51-BSA	repeat-sequence peptide of P. falciparum CSP/ its BSA conjugate
NANP101-P	repeat-sequence peptide of P. falciparum CSP
NVDP41-P, NVDP41-BSA	repeat-sequence peptide of P. falciparum CSP/ its BSA conjugate
DRAD31-P	repeat-sequence peptide of P. vivax CSP
PAPP31-P	repeat-sequence peptide of P. berghei CSP
PPPP311-P	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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