



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



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Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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## Anti-Circumsporozoite protein [2A10] Standard Size Ab03231-3.0

**Isotype and Format:** Mouse IgG2b, Kappa

**Clone Number:** 2A10

**Alternative Name(s) of Target:** CSP; PfCSP; CS

**UniProt Accession Number of Target Protein:** P02893

**Published Application(s):** crystallography, in vitro, in vivo, IP, ITC, WB, ELISA, IF

**Published Species Reactivity:** Plasmodium falciparum

**Immunogen:** The original antibody was generated by immunizing BALB/c mice with sporozoites of *P.falciparum*.

**Specificity:** The antibody is specific for the repeat domain of CSP. Circumsporozoite protein (CSP) is a secreted protein of the sporozoite stage of the malaria parasite.

**Application Notes:** The structure of the Fab fragment was determined by X-ray crystallography. Isothermal titration calorimetry (ITC) experiments were performed to understand the interaction between the antibody or the Fab fragment and CSP or the synthetic peptide antigen (NANP)<sub>6</sub>, which is a short segment of the antigenic NANP-repeat region of CSP. The binding free energies ( $\Delta G$ ) and dissociation constants (KD) were found to be -49.0 kJ/mol and 2.7 nM for the full antibody with CSP, -40 kJ/mol and 94 nM for the Fab with CSP, and -36.4 kJ/mol and 420 nM for the Fab with the (NANP)<sub>6</sub> peptide, suggesting that the antigenic region of CSP constitutes a multivalent antigen. The specificity of the antibody to (NANP)<sub>6</sub> peptide was confirmed by ELISA (Fisher et al., 2017; PMID: 28759640). The antibody inhibited in vitro inhibition of sporozoite invasion (Herrera et al., 2015; PMID: 26169272). The antibody is a neutralizing antibody, which can block sporozoite infectivity in vitro and in in vivo mouse models utilizing rodent *P. berghei* parasites expressing the *P. falciparum* CSP repeat region (Persson et al., 2002; PMID: 12471098). The antibody was employed to immunoprecipitate CSP from lysed sporozoites. The antibody inhibited parasite infection (*P.b.-P.f.* CSP-R parasite strain). Further, the antibody-mediated sporozoite neutralization could be enhanced by combining the antibody with the antibody 5D5, which recognize different epitopes of the *P. falciparum* CSP (Espinosa et al., 2015; PMID: 25762791). The antibody detected CSP by western blot analysis (Zhang et al., 2016 and Coppi et al., 2005; PMID: 15630135). The antibody, which is specific for the central repeats CSP, was employed for staining of live sporozoites (Zhang et al., 2016). A Western Blot assay for quantitative detection of Plasmodium falciparum circumsporozoite protein (PfCSP) in *P. falciparum* sporozoite (PfSPZ) and in recombinant (rPfCSP) product was developed using the antibody (Kumar et al. 2013; PMID: 23399449).

**Antibody First Published in:** Nardin et al. Circumsporozoite proteins of human malaria parasites

Plasmodium falciparum and Plasmodium vivax J Exp Med. 1982 Jul 1;156(1):20-30. [PMID:7045272](#)

**Note on publication:** The paper describes the generation and characterization of a panel of monoclonal antibodies to circumsporozoite (CS) proteins.

## Product Form

**Size:** 200 µg Purified antibody.

**Purification:** Protein A affinity purified

**Supplied In:** PBS with 0.02% Proclin 300.

**Storage Recommendation:** Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

**Concentration:** 1 mg/ml.

Important note - This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.