

Recombinant Plasmodium Falciparum LDH Protein

Cat. No. PLA-537 Lot. No. (See product label)

SPECIFICATION

Product Overview

Plasmodium falciparum LDH Protein is a recombinant Plasmodium falciparum LDH protein expressed and purified from E. coli. Plasmodium falciparum specific lactate dehydrogenase enzyme is an essential Plasmodium protein, expressed during the intra-erythrocytic stages of the parasitic life cycle. As such, it is used as a serological diagnostic marker for the detection of P. falciparum malaria.

Background

The LDH enzyme catalyzes the interconversion of pyruvate to lactate in the final step of glycolysis, which is required for energy production in living Plasmodium cells. Ferriprotoporphyrin IX (also known as hemozoin) is one of the products of hemoglobin degradation by malarial parasites and intoxicates the parasite by competing with NADH for the active site of LDH. Parasite survival therefore depends on the polymerization of hemozoin to hemozoin, which remains active in the food vacuole of the parasite and leads to parasite death (Penna-Coutinho et al., 2011).

Plasmodium LDH is a potential diagnostic target, because of its indispensable role in endoerythrocytic stage of Plasmodia parasites (Keluksar et al., 2014) and the ldh gene shows a high degree of genetic conservation (Shin et al., 2013). As Plasmodia are also dependent on LDH for glycolytic energy production, it is also a candidate for anti-malarial therapeutics.

Plasmodium falciparum is a unicellular protozoan parasite of humans, and causes the most dangerous form of malaria, with the highest rate of complications and mortality in humans. It is transmitted through the bite of female Anopheles mosquitos and is responsible for ~50% of all malaria cases worldwide. As a result, P. falciparum is regarded as the deadliest parasite in humans, causing 435,000 deaths in 2017 alone (WHO).

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Molecular Mass	~66 kDa
Formulation	10 mM Tris-HCl, pH 8.5, 10 mM NaCl.
Applications	Can be used for immunoassay development.
Notes	This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.
Type	Recombinant
ClassID 1	Infectious Disease
GENE INFORMATION	
Synonyms	Plasmodium Falciparum LDH

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