



Product Information

NADPH-P450 REDUCTASE Human, Recombinant

Product Code **N 5516**
Storage Temperature $-70\text{ }^{\circ}\text{C}$

EC# 1.6.2.4
Synonyms: NADPH:Ferrihemoprotein oxidoreductase

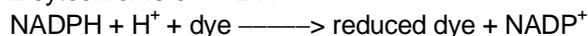
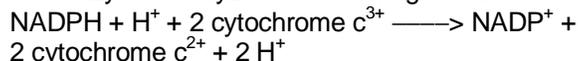
Product Description

A histidine-tagged, human recombinant protein isolated from insect cells infected with a baculovirus containing the cDNA for human NADPH-P450 reductase.

The main role of the Cytochrome P450 enzyme system is participation in the detoxification of xenobiotics in the liver.¹ It also participates in the activation of procarcinogens and the metabolism of other endogenous substrates such as steroids. Cytochrome P450 reductase catalyzes the reduction of hemethiolate-dependent monooxygenases such as EC 1.14.14.1 (unspecified xenobiotic monooxygenases)² and is part of the microsomal hydroxylating system. This reductase is a flavoprotein containing FMN and FAD.^{3,4} It also reduces cytochrome b_5 and cytochrome c . The molecular weight by SDS-PAGE is approximately 76.5 kDa.

The use of purified cytochrome P450 reductase allows the flexibility to optimize component ratios of cytochrome P450, NADPH-P450 reductase, and cytochrome b_5 for specific applications. It is typically used at a variety of ratios ranging from (0.5-5):(1) [reductase:P450] for in vitro reconstitution assays.

The enzyme catalyzes the following reactions:



Vial Content: 200 μg protein (Bradford). Solution containing 0.5-5 mg protein/ml of 10 mM potassium phosphate, pH 7.7, 0.1 mM EDTA, 1 mM DTT, 20% (v/v) glycerol.

Purity: >90% by SDS-PAGE

Activity: 20-55 units per milligram of protein.⁵

Unit Definition: One unit will cause the reduction of 1.0 μmole of cytochrome c by NADPH per minute at pH 7.7 at $25\text{ }^{\circ}\text{C}$.

References

1. Backes, W.L., In "Cytochrome P450", *Handbook of Experimental Pharmacology*, Vol. 105, Schenkman, J.B. and Greim, H. Eds., pp 15-34, Springer-Verlag, Berlin Heidelberg, (1993).
2. Enzyme Nomenclature, IUBMB, Academic Press, (1992).
3. Shepard, E.A. et al. *Analytical Biochem.*, **129**, 430 (1983).
4. Masters, B.S.S. et al., *Methods in Enzymology*, **10**, 565 (1967).
5. Phillips and Langdon, *J. Biol. Chem.*, **237**, 2652 (1962).

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