

Product Data Sheet

□ Cat # RP-419

Recombinant Human Tyrosinase, active

Size: □ 20 ug

Tyrosinase (EC1.14.18.1) is a copper-containing metalloglycoprotein that catalyzes several steps in the melanin pigment biosynthetic pathway. Tyrosinase and melan A are the most commonly expressed melanoma markers and are found in approximately 80 to 100 per cent of cases.

Tyrosinase is known to be a key enzyme in melanin biosynthesis, involved in determining the color of mammalian skin and hair. It's main applications are for the cosmetic industry in search of new potent tyrosinase inhibitors. Tyrosinase (EC 1.14.18.1) is a copper-containing enzyme that catalyzes four steps in the melanin and catecholamine synthesis pathways. Like tyrosine hydroxylase (EC 1.13.16.2), it can catalyze the formation of L-DOPA in the brain and nervous system. It oxidizes monophenols, but like catecholoxidase (EC 1.10.3.1) it can also oxidize o-diphenols to o-quinones. In humans, tyrosinase is sorted into melanosomes.

Source:

Escherichia Coli. Tyrosinase Human (protein accession #P14679) Recombinant protein expressed in E.coli (>95%, ~52 Kda). The Tyrosinase is expressed with 6xHis tag and purified by proprietary chromatographic techniques.

Activity: One microgram of RP-419 will produce approximately 90 pmol of adduct at 37°C using 0.5mM L-Tyrosine as substrate in 50mM potassium phosphate, pH 7.3, 2% dimethylformamide, 5mM MBTH (3-methyl-2-benzothiazolinone hydrazone) and monitoring formation of dopachrome-MBTH adduct at 484nm. Note: ($\epsilon_{484}=22,300 \text{ M}^{-1}\text{cm}^{-1}$). **NOTE:** tyrosinases, in particular mammalian tyrosinase, are inherently inefficient enzymes, with typical changes in OD only in the deciOD range, although the reaction reaches maximal velocity quickly (typically within two minutes). In addition, its substrates and MBTH are very unstable; make stocks fresh and keep sealed in the dark until use.

Storage and Stability: Store vial at -20°C to -80°C. When stored at the recommended temperature, this protein is stable for 12 months. After reconstitution, store in liquid at 4°C for ~1 week or aliquot in suitable size and store at -20°C for long term storage. **Please avoid freeze-thaw cycles.**

Application and Suggested Dilutions:

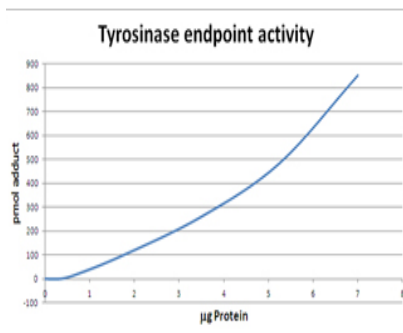
To study enzyme kinetics, ELISA Inhibition Assays, Western Blotting. It is recommended to use fresh stock solution. Users must optimize the appropriate concentration and conditions for each assay.

Usage:

This item is for LABORATORY RESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

General references:

Randhawa, et al. FASEB J (2009). 23, 835. Germanas, et al.; Bioorg. Med. Chem. Lett. (2007) 17, 6871.



RP-419

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