

Active Recombinant Human TYR Protein, His tagged

Cat. No. TYR-222H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Active Recombinant Human TYR Protein with His tag was expressed in E.coli.
Species	Human
Source	E.coli
Description	Tyrosinase 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. It is involved in cancer, Parkinson's, pigmentation diseases, Alzheimer's and obesity. Much of the research and inhibitor screening has used mushroom tyrosinase. However, mushroom tyrosinase interacts very differently with substrates and inhibitors compared to the human enzyme. In addition, commercially available mushroom tyrosinase is not always of good purity. Recombinant versions of human tyrosinase amino acids 1-345 or 1-378, also available commercially, are not functional due the lack of critical catalytic and structural residues.
Form	Liquid. In 50mM TRIS/HCl, pH 8.0, 1M NaCl, 0.05% Empigen BB, and 30% glycerol.
Bio-activity	One microgram of Tyrosinase will produce greater than 90 pmol of adduct at 37 centigrade over a period of 20 minutes 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

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adduct at 484nm ($\epsilon_{484}=22,300 \text{ M}^{-1}\text{cm}^{-1}$). 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. Lifetime and rate of enzymatic activity can be increased by the addition of CuCl to the assay buffer, but this will increase background and may complicate other redox reactions in the assay.

Molecular Mass	~52 kDa (SDS-PAGE)
Purity	≥85% (SDS-PAGE)
Applications	Useful tool to study enzyme kinetics and screen for inhibitors.
Storage	Store at -80 centigrade
Shipping	Dry ice

GENE INFORMATION

Gene Name	TYR tyrosinase [Homo sapiens (human)]
Official Symbol	TYR
Synonyms	TYR; tyrosinase; ATN; CMM8; OCA1; OCA1A; OCAIA; SHEP3; tyrosinase; LB24-AB; SK29-AB; monophenol monooxygenase; oculocutaneous albinism IA; tumor rejection antigen AB; EC 1.14.18.1
Gene ID	7299
mRNA Refseq	NM_000372

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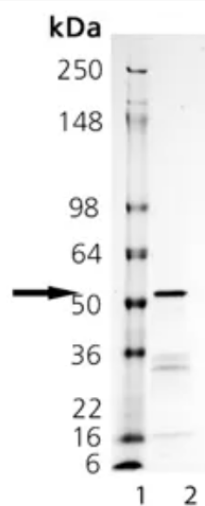
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Protein Refseq NP_000363

MIM 606933

UniProt ID P14679

SDS-PAGE



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