

Product datasheet

Tyrosine Assay Kit (Colorimetric) ab185435

[2 References](#) [2 Images](#)

Overview

Product name	Tyrosine Assay Kit (Colorimetric)
Detection method	Colorimetric
Sample type	Urine, Serum, Plasma, Other biological fluids
Assay type	Quantitative
Sensitivity	< 50 µM
Species reactivity	Reacts with: Mammals, Other species
Product overview	Abcam's Tyrosine Assay Kit (Colorimetric) (ab185435) is a simple, yet sensitive assay that is able to detect normal and abnormal concentrations of Tyrosine in biological fluids. The assay is based on the enzymatic oxidation of Tyrosine producing a stable signal (OD 492 nm), which is directly proportional to the amount of Tyrosine. Sample preparation is minimal and does not require strenuous or complicated procedures. The assay can detect as low as 50 µM of Tyrosine in a variety of biological samples.

Notes

Tyrosine (Tyr) is one of the four standard amino acids containing an aromatic group as a side chain. Its hydrophobicity is one of the main characteristics of this uncharged polar amino acid. In addition to being an essential amino acid Tyr is important in number of biological processes such as the synthesis of neurotransmitters, thyroid hormones, melanine, fumarate and acetoacetate. The pathology of abnormal concentrations of Tyr is well known in diseases including phenylketonuria, hypothyroidism, tyrosinemia, albinism, and alkaptonuria.

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Platform Microplate reader

Properties

Storage instructions Store at -20°C. Please refer to protocols.

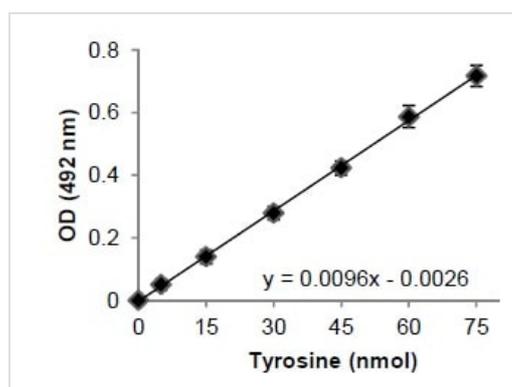
Components	100 tests
Tyr Assay Buffer	1 x 25ml

Components	100 tests
Tyr Enzyme Mix	1 vial
Tyr Standard	1 vial

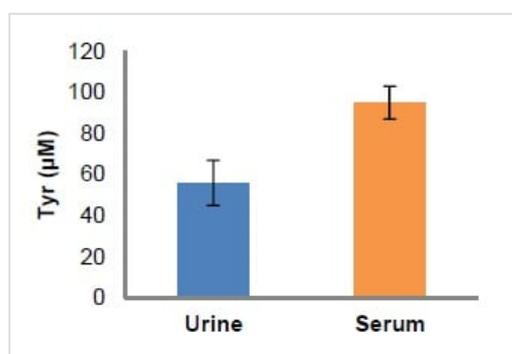
Relevance

Tyrosine (4-hydroxyphenylalanine, or 2-amino-3(4-hydroxyphenyl)propanoic acid) is one of the 20 amino acids that are used by cells to synthesize proteins. Tyrosine cannot be completely synthesized by animals, although it can be made by hydroxylation of phenylalanine if the latter is in abundant supply. There are three structural isomers of Tyr, namely para-Tyr (p-Tyr), meta-Tyr (m-Tyr) and ortho-Tyr (o-Tyr). Enzymatically, only the first isomer (p-Tyr) is produced from L-Phe by the Phe-hydroxylase enzyme. The other two isoforms, m-Tyr and o-Tyr can be produced as a consequence of free radical attack on Phe in states with increased oxidative stress. Tyrosine is converted to DOPA by the enzyme, tyrosine hydroxylase. It plays a key role in signal transduction, since it can be tagged with a phosphate group (phosphorylated) by protein kinases to alter the functionality and activity of certain enzymes. (In its phosphorylated state, it is sometimes referred to as phosphotyrosine.) Tyrosine is also a precursor to the thyroid hormones thyroxine and tri-iodothyronine, the pigment melanin, and the biologically-active catecholamines dopamine, norepinephrine and epinephrine.

Images



Tyrosine Standard Curve.



Measurement of Tyrosine concentration in Human urine and serum.

Both 135 µL samples were deproteinized using 10 kDa Spin Column and spiked with known amount of Tyrosine (30 nmol).

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