



Product datasheet

Melatonin ELISA Kit ab213978

6 References 2 Images

Overview

Product name Melatonin ELISA Kit

Detection method Colorimetric

Precision	Intra-assay				
	Sample	n	Mean	SD	CV%
	1	20	5.74ng/ml		4.31%
	2	20	0.45ng/ml		13.74%
	Inter-assay				
	Sample	n	Mean	SD	CV%

Sample	n	Mean	SD	CV%
1	12	5.98ng/ml		7.36%
2	12	0.58ng/ml		17.54%

Sample type Saliva, Serum, Plasma

Assay type Competitive

Sensitivity 162 pg/ml

Range 0.08 ng/ml - 50 ng/ml

Recovery	Sample specific recovery		
	Sample type	Average %	Range
	Saliva	96.8	83.3% - 108.4%
	Serum	103	83% - 124%
	EDTA Plasma	101.1	90% - 112.2%

Assay time 2h 00m

Assay duration Multiple steps standard assay

Product overview The Melatonin ELISA Kit (ab213978) is a complete kit for the determination of melatonin in

human, mouse, rat and other sample types. The detection is independent of species, with the use of a simple, rapid extraction protocol. Please read the complete kit insert before performing this assay.

This assay allows for the easy and precise measurement of melatonin in multiple matrices with a rapid time-to-answer. Using this kit, changes in Melatonin levels can be measured in two hours, with a high level of reproducibility, specificity, and accuracy. The levels measured align with published GC / MS data, and the sensitivity of the assay is such that serum and plasma levels can be measured with only a quick extraction. This assay is independent of species, and results have been obtained from animal and fruit matrices.

In this assay samples or standards are added to wells coated with a goat anti-mouse IgG antibody. A monoclonal antibody specific to free melatonin and a solution of a biotin labeled melatonin tracer are added to the wells. The plate is incubated. During this incubation, the antibody binds to melatonin in the sample or to the tracer in a competitive manner. The plate is washed, leaving only bound melatonin and bound tracer on the plate. A solution of Horseradish Peroxidase conjugated Streptavidin (SA-HRP) is added, which binds to the biotinylated tracer. The plate is then incubated. Excess SA-HRP is washed out and TMB substrate solution is added and incubated. An HRP-catalyzed reaction generates a blue color in the solution. Stop solution is added to stop the substrate reaction. The resulting yellow color is read at 450 nm. The amount of signal is inversely proportional to the level of melatonin in the sample.

This assay is suitable for measuring melatonin in a number of matrices. Human, mouse and rat, serum and plasma and porcine serum have been validated for use, but other species may also work. Human saliva, and fruit (banana and plum) have also been validated in this assay. Other matrices, not presented in this manual, should be validated by the researcher using the extraction and assay protocol supplied.

Notes

Melatonin (N-acetyl-5-methoxytryptamine) is produced in the pineal gland and is a major component of the regulation of the circadian rhythm. In typical individuals, it is present at higher concentrations during the night, and contributes to the normal sleep-wake cycle.

Melatonin is produced from tryptophan through a number hydroxylation and methylation steps. It is metabolized in the liver, and excreted in urine as 6-hydroxymelatonin and 6-sulfatoxymelatonin. The Enzo Melatonin ELISA shows no cross reactivity with any of the major melatonin metabolites or precursors.

Melatonin and metabolites of melatonin, have demonstrated antioxidant and free radical scavenging potential. There is also evidence that they play a role in the regulation of reactive oxygen protein pathways. Published research shows a possible correlation to melatonin levels and the prevalence of certain cancers.

Saliva can be used to measure melatonin levels. Saliva, compared to serum or plasma, is relatively easy to obtain and does not contain many of the interfering substances present in serum and plasma. Melatonin in saliva is representative of the levels circulating throughout the body, although the exact proportion is still not fully quantified with published values ranging from 20 – 50 % of serum values. New areas of research have grown around studying melatonin and the effect on libido, luteinizing hormone (LH), follicle-stimulating hormone (FSH), and other hormone pathways. The role in cancer, sleep cycle, aging, and other areas are also growing in interest, with particular focus on melatonin receptors and the bioavailability of circulating melatonin with the increased use of melatonin as a dietary supplement. The effect on individuals that work late night shifts, and people with decreased ability to perceive light, is also of important as normal day and night cues are not present and the regulation of melatonin levels is affected.

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It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform Pre-coated microplate (12 x 8 well strips)

Properties

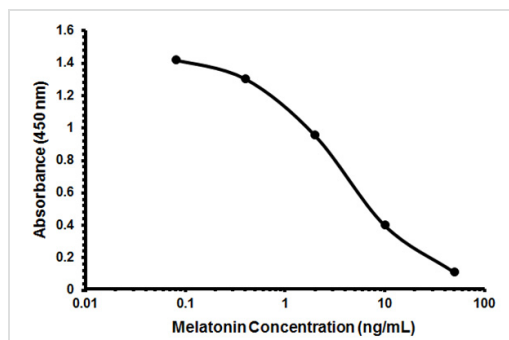
Storage instructions Please refer to protocols.

Components	1 x 96 tests
Assay Buffer	1 x 50ml
Goat anti-mouse IgG Microplate (12 x 8 wells)	1 unit
Melatonin Antibody (Lyophilized)	1 vial
Melatonin Conjugate	1 x 20ml
Melatonin Standard (5,000ng)	1 vial
Melatonin Tracer Concentrate (100X)	1 x 60µl
Plate Sealer	3 units
Stabilizer (50X)	1 x 1ml
Stop Solution	1 x 10ml
TMB Substrate	1 x 25ml
Wash Buffer Concentrate (20X)	1 x 25ml

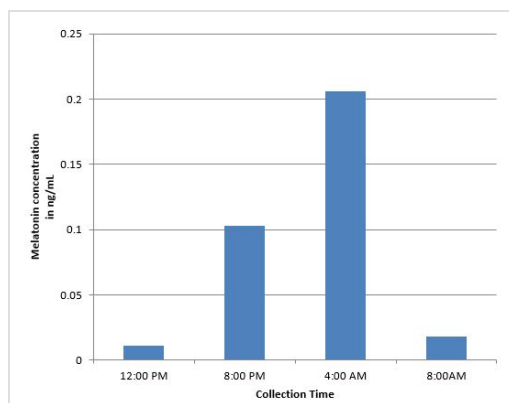
Relevance Melatonin, the principal hormone of the pineal gland, is also produced by the retina, lens and GI tract. It is naturally synthesized from the amino acid tryptophan (via synthesis of serotonin) by the enzyme 5-hydroxyindole-O-methyltransferase. Production of melatonin by the pineal gland is under the influence of the suprachiasmatic nucleus of the hypothalamus (SCN -the site of a circadian clock) which receives information from the retina about the daily pattern of light and darkness. Melatonin can alter the timing of mammalian circadian rhythms, as well as regulate the reproductive alterations that occur in response to changes in day length in seasonally breeding mammals. Melatonin is also an extremely powerful antioxidant, with a particular role in the protection of nuclear and mitochondrial DNA. Therapeutically there may be many potential uses for melatonin such as in the treatment of various forms of some forms of depression, cancer, HIV, plus other viral diseases. Currently, Melatonin is a popular therapy for jet-lag and disturbances of sleep.

Cellular localization Secreted

Images



Melatonin ELISA Kit (ab213978) Standard Curve.



Time Course for Melatonin Levels in Saliva.

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