

Histamine ELISA kit ab213975

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Overview

Product name
Histamine ELISA kit

Detection method
Colorimetric

Precision	Intra-assay				
	Sample	n	Mean	SD	CV%
	1	20	4.96ng/ml		4.4%
	2	20	1.11ng/ml		5%
	3	20	0.37ng/ml		8.5%

	Inter-assay				
	Sample	n	Mean	SD	CV%
	1		5.08ng/ml		5.6%
	2		1.03ng/ml		11.8%
	3		0.3ng/ml		9%

Sample type
Urine, Serum, Cell culture media, EDTA Plasma

Assay type
Competitive

Sensitivity
0.068 ng/ml

Range
0.098 ng/ml - 25 ng/ml

Recovery	Sample specific recovery		
	Sample type	Average %	Range
	Urine	96.97	71.9% - 115%
	Serum	121	111% - 131%
	Cell culture media	82	44% - 102%

Sample type	Average %	Range
EDTA Plasma	123.33	109% - 148%

Assay time

2h 30m

Assay duration

Multiple steps standard assay

Species reactivity

Reacts with: Mouse, Rat, Human

Product overview

Histamine ELISA Kit (ab213975) is a competitive ELISA kit for the quantitative determination of histamine in human, mouse, rat and canine sample matrices. This competitive, ultra-sensitive ELISA does not require acylation of histamine and has a time-to-answer of 2 hours. Please read the complete kit insert before performing this assay.

In this assay samples or standards are added to wells coated with a goat anti-rabbit IgG antibody. A polyclonal antibody to histamine and a solution of biotinylated histamine tracer are both added to the wells and the plate is incubated. During this incubation, the antibody binds the histamine in the sample or tracer in a competitive manner. The plate is washed, leaving only bound histamine on the plate. A solution of Horseradish Peroxidase conjugated Streptavidin (SA-HRP) is added to all wells and the plate is incubated. The plate is washed to remove excess conjugate. TMB substrate is added to the wells and the plate is incubated. Stop solution is added to stop the substrate reaction. The resulting yellow color is read at 450nm. The amount of signal is inversely proportional to the level of Histamine in the sample.

Neat (undiluted) **methanol-extracted** human serum and plasma samples, neat urine and tissue culture media in addition to mouse, rat and canine samples have been **validated for use in this**. However, due to variation in samples, dilution may be required. For detailed methanol-extraction method, please refer to Protocol Booklet.

Notes

Histamine is an endogenous short-acting biogenic amine synthesized from the amino acid histidine and is widely distributed throughout the body. Histamine is an important mediator of immediate-type-allergic reactions. Normally, there is a minimal amount of histamine circulating in the human body. An allergic reaction can occur when a substance enters the body (i.e. food, chemicals, insect bites, oils from plants). In response to the molecule, the body will then release larger quantities of histamine, which starts a cascade of events and begins an immune response. The body balances the histamine release by producing Epinephrine (adrenaline) which can help modulate the effects of histamine. When histamine is released, part of the cascade of events is inflammation. Antihistamines work by blocking the action of histamine and the resulting inflammation, amongst other symptoms, to provide relief.

Anaphylaxis occurs when there is a hypersensitive response. Reactions can range from mild to severe and, in extreme cases, can be fatal. Symptoms of hypersensitivity to histamine include hives, tingling feeling in the mouth, difficulty breathing, stomach cramping and diarrhea.

Elevations in plasma and tissue histamine levels have been reported during anaphylaxis and experimental systems investigating the allergic responses of the skin and airways. Because of its potent role in the immune response, histamine in the body is present in a very transitory state and can only be measured within minutes of release. The half-life of histamine in a biological system is four minutes before conversion to n-methyl histamine. N-methyl histamine is a major product of histamine metabolism, is present in urine and has a longer half-life than that of histamine.

Cross Reactivity

Compound	Cross Reactivity
Histamine	100%
N α -methyl Histamine	$\leq 2\%$
N α -Methyl Histamine	$\leq 0.4\%$
N-Acetyl Histamine	$\leq 0.01\%$
L-Histidine	$\leq 0.02\%$

Histamine is also in a class of neurotransmitters called “Small Molecule Neurotransmitter Substances”. This group includes molecules such as Serotonin, Epinephrine and Dopamine. Additionally, histamine plays a role in gastric acid secretion, assisting in the induction of acid production.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests	1 x 96 tests
(20X) Wash Buffer	1 x 100ml	1 x 100ml
Antibody Diluent	1 x 6ml	1 x 6ml
Assay Buffer	1 x 25ml	1 x 25ml
Goat anti-Rabbit IgG coated microplate (12x 8 well strips)	1 unit	1 unit
Histamine Antibody (Lyophilized)	1 vial	1 vial
Histamine Standard Stock (250 ng/mL)	1 x 200 μ l	1 x 200 μ l
Histamine Tracer (Lyophilized)	1 vial	1 vial
Plate Sealer	3 units	3 units
SA-HRP Conjugate	1 x 20ml	1 x 20ml
Stop Solution (1N Soln.)	1 x 10ml	1 x 10ml
TMB Substrate	1 x 25ml	1 x 25ml
Tracer Diluent	1 x 6ml	1 x 6ml

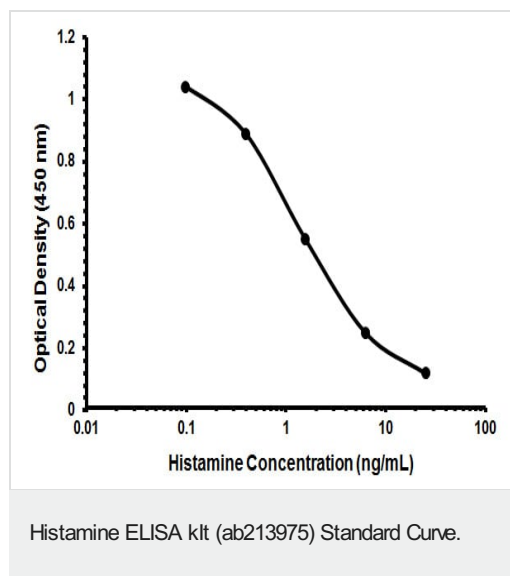
Relevance

Histamine is located in mast cells, endocrine cells of the gut, blood cells and in some cells of the peripheral and central nervous system. Histamine is a potent vasodilator when secreted by mast cells found in various tissues as a result of allergic hypersensitivity or inflammation. Histamine causes running nose, sneezing and itching, and narrows the airways in the lungs. In the central nervous system, Histamine is putative neurotransmitter. In the brain, its highest content has been found in the hypothalamus and in certain areas of the mesencephalon.

Cellular localization

Secreted

Images



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