



## Histamine Controls

Catalog Number: ENZ-KIT140-CTL

Size: 1 vial/low, 1 vial/medium, 1 vial/high

### Background

Histamine is an endogenous short-acting biogenic amine synthesized from the amino acid histidine which is widely distributed throughout the body<sup>1</sup>. Histamine is an important mediator of immediate-type-allergic reactions<sup>2</sup>. Normally, there is an insignificant amount of histamine circulating in the human body. An allergic reaction can occur when a foreign substance enters the body (e.g. food, chemicals, insect bites, oils from plants). In response to the molecule, the body will 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<sup>3</sup>. 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<sup>4</sup>.

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<sup>5</sup>, assisting in the induction of acid production.

### Intended Use and Description

The intention is for these products to be used as quantitative controls for the determination of Histamine concentration in biological matrices, such as serum, plasma and urine. The concentrations have been determined using the Enzo Life Sciences Histamine ELISA kit (ENZ-KIT140A-0001). The controls were prepared in assay buffer and contain Histamine at a high, medium and low concentration.

### Storage and Stability

The liquid controls should be stored at or below -20°C. The controls can be stored at -20°C short term but should be stored at -80°C for long term storage. The material should be used before the expiration date indicated on the lot specific Certificate of Analysis.

### Reagent Preparation

The liquid controls are prepared at the working concentration and should be added directly to the plate to be assayed. They are intended to be single-use only.



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### Procedure and Expected Values

Please refer to the appropriate lot specific CoA for lot specific ranges for the high, medium and low Histamine controls.

### Technical Information

- The lot specific ranges described on the CoA were determined using the Enzo Life Sciences Histamine ELISA Kit (ENZ-KIT140A-0001). Use of ELISA kits other than the Histamine ELISA Kit (ENZ-KIT140A-0001) could result in values different than those printed on the corresponding lot Certificate of Analysis.
- Additionally, if the expected values are not obtained please confirm that the correct volume of the control was assayed.

### References

1. Zampeli E, Tiligada E, British Journal of Pharmacology, (2009) 157: 24-33.
2. Behrendt H, Z Hautkr, (1985) 60 Suppl 1:7-13.
3. White MV, Journal of Clinical Immunology, (1990) 86 (4 Pt 2): 599-605.
4. Belič, et al. Computers in Biology and Medicine, (1999) 29: 361-375
5. Nuutinen S, Panula P., Advances in Experimental Medicine and Biology, (2011) 709: 95-107.

Kit booklet number: 25-0778

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