

Histamine N-Methyl Transferase, Enzyme Activity

Catalog	Unit
TBP0071-1MG	1 mg
TBP0071-5MG	5 mg

Product Details

Form: Freeze-dried powder

Solubility: Distilled water or dilute buffer

Stability: Store at -20° C (-4° F)

Activity: 50-100 U/mg

Protein: 90%

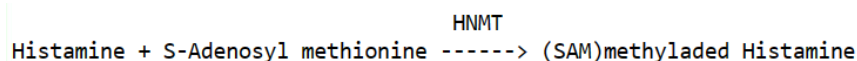
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Unit Definition

The amount of enzyme which will convert one nanomole of histamine to methyl histamine per hour at pH 8.5 at 37°C.

Applications

(HNMT) (EC 2.1.1.8) is the enzyme which catalyzes the n-methylation of histamine as follows:



The mechanism involves the transfer of an active methyl group from S-Adenosyl methionine (SAM) to histamine. Histamine is present in most of mammalian tissues and HNMT is the enzyme responsible for inactivation of histamine in mammals. Methylation is major route of histamine metabolism. HNMT has been used to measure histamine by radio-enzymatic method. HNMT has been purified from rat kidney. Molecular weight equals 33,400, pH optimum is 8.00-8.25. We have also purified it from bovine kidney which seems to be very similar to rat kidney.

Reagents

1. 1.0 mM S-adenosylmethionine (SAM), (0.435 mg/ml). 20 µl. (This product must be of highest purity and must not contain traces of S-adenosylhomocysteine.)
2. 0.125 M Potassium Phosphate, pH 7.8, in distilled water. 200 µl.
3. 0.01 M Histamine in distilled water. 100 µl.
4. 14C S-adenosylmethionine, 10 µCi (55 mCi/mMole). Distilled water is added to this solution to make 0.5 ml. This solution must be kept on ice until use.

Note: The assay solution used for HNMT assay is prepared by mixing the above four reagents in the amounts indicated.

5. 1% Bovine serum albumin (BSA) solution.
6. 0.5 M Sodium borate, (100.65 g/L), pH 10.0.
7. Toluene:isoamyl alcohol (3:2, v/v).
8. HNMT (enzyme) solution. Prepare a suitable dilution of the enzyme using cold 1% BSA. Prepare fresh prior to assay.

Calculation

$$\text{Activity (U/mg)} = \frac{(\text{CPM}/\text{Sample})(6)(\text{Enz. Diln.})}{(\text{CPM}/\text{nmole SAM})(\text{mg Enz./ml})}$$

Note: 6=Conversion Factor from 10 minutes incubation to 60 minutes (see Unit Definition).

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