

Product Data Sheet

□ Cat # RP-366

Recombinant (E.Coli) Urease

Size: □ 1 mg

Source: *Escherichia Coli*. Urease (EC3.5.1.5) is an enzyme that catalyzes the hydrolysis of urea into carbon dioxide and ammonia. The reaction occurs as follows: $(\text{NH}_2)_2\text{CO} + \text{H}_2\text{O} \rightarrow \text{CO}_2 + 2\text{NH}_3$. In 1926 James Sumner showed that urease is a protein. Urease is found in bacteria, yeast and several higher plants. Characteristics: Active site metal: nickel(II); Molecular weight: 480 kDa or 545 kDa for Jack Bean Urease (calculated mass from the amino acid sequence); Optimum pH: 7.4; Optimum Temperature: 60 degrees Celsius; Enzymatic specificity: urea and hydroxy urea; Inhibitors: heavy metals. The multi-subunit enzyme usually has a 3:3 (alpha:beta) stoichiometry with a 2-fold symmetric structure (note that the image above gives the structure of the asymmetric unit, one third of the true biological assembly). An exceptional urease is found in *Helicobacter pylori*, which combines four of the regular six subunit enzymes in an overall tetrahedral assembly of 24 subunits ($\alpha_{12}\beta_{12}$). This supra-molecular assembly is thought to confer additional stability for the enzyme in this organism, which functions to produce ammonia in order to neutralize gastric acid. The presence of urease is used in the diagnosis of *Helicobacter* species. Each mg of protein contains 345µg Potassium Phosphate and 25µg EDTA Na₂.

Applications and Suggested Dilutions: It is recommended to reconstitute the lyophilized Urease in sterile 18MΩ-cm H₂O. Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE. Users must optimize the appropriate concentration and conditions for each assay.

Storage and Stability: Urease although stable at 4°C for 3 weeks, should be stored desiccated below -18°C.

Please prevent freeze-thaw cycles. If supplied in powder then reconstitute it in 1 ml water for 1 mg/ml stock and store in liquid at 4°C for ~1 week or aliquots in suitable size and store at -20°C for long term storage.

Biological Activity: The specific activity was found to be 150 IU/mg.

Unit Definition: One Unit oxidizes one micromole of NADH per minute at 25°C, at pH 7.6.

Usage: This item is for LABORATORY RESEARCH USE ONLY.

Related items:

RP-341	Recombinant (E.Coli) Anti-p53 scFv IgG
RP-342	Recombinant (E.Coli) Anti-Hepatitis B Virus Surface Antigen (HBsAg) Ck IgG
RP-343	Recombinant (E.Coli) Anti-Tetanus Toxoid scFv IgG
RP-345	Recombinant (E.Coli) Dengue Virus NS1 c-end Type 2 protein
RP-348	Recombinant (E.Coli) Epstein-Barr Virus (HHV-4) Early Antigen
RP-351	Recombinant (E.Coli) Epstein-Barr Virus (HHV-4) Mosaic p18
RP-352	Recombinant (E.Coli) Human Enteropeptidase/Enterokinase, Light Chain
RP-354	Recombinant (E.Coli) Human Protein Disulfide Isomerase
RP-356	Recombinant (E.Coli) Human Protein Phosphatase 4 Catalytic subunit
RP-357	Recombinant (E.Coli) Human histidyl-tRNA Synthetase
RP-358	Recombinant (E.Coli) Lysostaphin
RP-360	Recombinant (E.Coli) Human Matrix Metalloproteinase-7
RP-361	Recombinant (E.Coli) ProMatrix Metalloproteinase-7
RP-362	Recombinant (E.Coli) Malate Dehydrogenase
RP-363	Recombinant (E.Coli) Human Ubiquitin Conjugating Enzyme 9, his tag
RP-365	Recombinant (E.Coli) Disulfide Oxidoreductase
RP-366	Recombinant (E.Coli) Urease
RP-367	Recombinant (E.Coli) Yeast Thioreduxin Reductase (NAPH)
RP-368	Recombinant (E.Coli) Lactate Dehydrogenase
RP-369	Recombinant (E.Coli) Human Alanine Aminotransferase
RP-370	Recombinant (E.Coli) Thermostable dUTPase
RP-371	Recombinant (E.Coli) Human Glycogen Phosphorylase
RP-374	Recombinant (E.Coli) T4 DNA Ligase
RP-375	Recombinant (E.Coli) Staphylokinase
RP-376	Recombinant (E.Coli) Isocitrate Dehydrogenase
RP-378	Recombinant (E.Coli) Disulfide Bond Isomerase
RP-387	Recombinant (E.Coli) Human Matrix Metalloproteinase-8

RP-366

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