

Product Information

Renin human recombinant, expressed in mammalian cells

Catalog Number **R2779**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

EC 3.4.23.15

Synonyms: angiotensin-forming enzyme;
angiotensinogenase

Product Description

Human renin is a member of the Peptidase A1 family. It catalyzes the hydrolysis of angiotensinogen to produce angiotensin I.

Renin is processed as a 406 amino acid precursor (45,057 Da) containing a 23 amino acid signal peptide and a 43 amino acid propeptide. Native active renin is a 340 amino acid glycoprotein containing three disulfide bonds.¹ Prorenin granules are stored within modified smooth muscle cells adjacent to the distal tubule and the afferent arteriole. Prorenin is released into the blood from the juxtaglomerular cells in the wall of the afferent arteriole. Prorenin is then hydrolyzed by plasma kallekrein to produce active renin.²

Optimal pH:^{3,5} 5.5-7.6

Inhibitor: Pepstatin A, Catalog Number P5318

Reagent

The product is supplied as a solution in 50 mM Tris HCl, pH 8. It is expressed in mammalian cells as prorenin. The prorenin is activated to renin using trypsin, and repurified.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and storage at $-20\text{ }^{\circ}\text{C}$ is recommended. When stored at $-20\text{ }^{\circ}\text{C}$, the enzyme retains activity for at least 1 year.

Solutions can be stored frozen at -10 to $-70\text{ }^{\circ}\text{C}$ for six months to a year. Activity is lost after ~8 freeze-thaw cycles. Dilute solutions (<1 mg/ml) can be stabilized by the addition of albumin.^{3,4}

Product profile

Purity: $\geq 98\%$ (SDS-PAGE)

Specific activity: ≥ 90 units/ μg protein

Unit definition: One unit will produce one fluorescent unit from the hydrolysis of Renin Substrate I (Arg-Glu(EDANS)-Ile-His-Pro-Phe-His-Leu-Val-Ile-His-Thr-Lys(dabcyI)-Arg) per minute at $37\text{ }^{\circ}\text{C}$ at pH 8.0.

Related Products

Angiotensinogen, Catalog Number A2562
Angiotensin I, Catalog Number A9650
Renin Substrate I, Catalog Number R8276
Kallekrein, from human plasma, Catalog Number K2638

References

1. www.expasy.org/cgi-bin/niceprot.pl?P00797
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3. Slater, E.E., and Strout, H.V., *J. Biol. Chem.*, **256**, 8164-8171 (1981).
4. Yokosawa, H., *et al.*, *J. Biol. Chem.*, **255**, 3498-3502 (1980).
5. Ito, T., *et al.*, *Biochim. Biophys. Acta*, **569**, 202-210 (1979).

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