

## Product Information

### Angiotensin Converting Enzyme, human recombinant, expressed in HEK 293 cells

Catalog Number **SAE0075**  
Storage Temperature  $-20\text{ }^{\circ}\text{C}$

CAS RN 9015-82-1  
EC 3.4.15.1

Synonyms: ACE1, ACE, CD143, DCP1, DCP,  
Dipeptidyl carboxypeptidase I, Kininase II, Peptidyl-  
dipeptidase A, Peptidyl-dipeptide Hydrolase  
Uniprot P12821

#### Product Description

Angiotensin Converting Enzyme (ACE) is a key component in the renin-angiotensin system (RAS), which is well known for its role in the regulation of blood pressure, electrolyte balance, and vascular remodeling.<sup>1,2</sup> ACE is located mainly in the capillaries of the lungs, but can also be found in endothelial and kidney epithelial cells.<sup>3</sup> This hormone system also regulates body fluids volume. Renin produces angiotensin I by cleaving several amino acids from angiotensinogen. ACE then hydrolyzes angiotensin I to yield active angiotensin II. Angiotensin II also stimulates the adrenal cortex to secrete aldosterone, which also causes an increase in blood pressure by stimulating sodium reabsorption by the kidney.<sup>1</sup> Since ACE exhibits critical functions regulating RAS, ACE inhibition has become a promising approach for drug targeting in the treatment of cardiovascular diseases such as hypertension, heart failure, and diabetic nephropathy.<sup>4</sup>

This recombinant ACE is expressed in human HEK 293 cells as a glycoprotein with a calculated molecular mass of 138 kDa (amino acids 30–1232). The DTT-reduced protein migrates as a 180 kDa polypeptide on SDS-PAGE because of glycosylation.

This product is lyophilized from a  $0.22\text{ }\mu\text{m}$  filtered solution in PBS, pH 7.4. It is produced in human cells, without the use of serum. The human cells expression system allows human-like glycosylation and folding, and often supports higher specific activity of the protein. The protein is expressed without artificial tags.

The specific activity of this product is measured by its ability to cleave Hippuryl-His-Leu.

Specific activity:  $\geq 10$  units/mg protein

Unit definition: One unit is defined as the amount of enzyme required to produce 1.0 micromole of hippuric acid from hippuryl-His-Leu per minute in 50 mM HEPES and 300 mM NaCl at pH 8.3 at  $37\text{ }^{\circ}\text{C}$

Purity:  $\geq 95\%$  (SDS-PAGE)

#### Precautions and Disclaimer

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

#### Preparation Instructions

Briefly centrifuge the vial before opening. Reconstitute in water to a concentration of 0.1 mg/mL. Do not vortex. This solution can be stored at  $2\text{--}8\text{ }^{\circ}\text{C}$  for up to 1 week. For extended storage, it is recommended to store in working aliquots at  $-20\text{ }^{\circ}\text{C}$ .

#### Storage/Stability

Store the lyophilized product at  $-20\text{ }^{\circ}\text{C}$ . The product is stable for at least 2 years as supplied.

#### References

1. Alvarenga, E.C., *et al.*, *PLoS ONE*, **11(12)**, e0165371 (2016).
2. Skeggs, L.T., *et al.*, *J. Exp. Med.*, **103(3)**, 295-299 (1956).
3. Chamsi-Pasha, M.A., *et al.*, *Curr. Heart Fail. Rep.*, **11(1)**, 58-63 (2014).
4. Zhang, C., *et al.*, *J. Phys. Chem. B*, **117(22)**, 6635-6645 (2013).

NA, LB, GCY, MAM 01/18-1