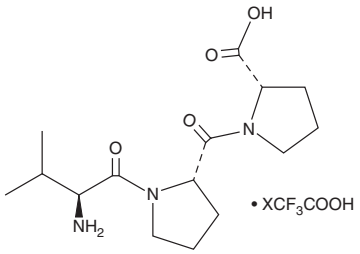
PRODUCT INFORMATION

H-Val-Pro-Pro-OH (trifluoroactetate salt)

Item No. 28898

Formal Name:	L-valyl-L-prolyl-L-proline, trifluoroactetate salt
Synonym:	VPP
MF:	$C_{15}H_{25}N_3O_4 \bullet XCF_3COOH$
FW:	311.4
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

H-Val-Pro-Pro-OH (VPP) (trifluoroactetate salt) is supplied as a solid. A stock solution may be made by dissolving the VPP (trifluoroactetate salt) in the solvent of choice, which should be purged with an inert gas. VPP (trifluoroactetate salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of VPP (trifluoroactetate salt) in these solvents is approximately 15 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of VPP (trifluoroactetate salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of VPP (trifluoroactetate salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

VPP is a peptide inhibitor of angiotensin-converting enzyme (ACE; IC_{50} = 9 µM).[1] It inhibits acetylcholine-induced nitric oxide (NO) production in human umbilical vein endothelial cells (HUVECs) when used at a concentration of 1 µM and induces vasorelaxation in precontracted isolated rat aortic rings.[2] VPP (0.3 mg/kg) decreases systolic blood pressure in spontaneously hypertensive, but not normotensive, rats.[3] Dietary administration of VPP reduces plasma levels of total cholesterol, HDL-cholesterol, and triglycerides, expression of *Il6* and *Il1b*, and aortic arch intimal thickening and atherosclerotic plaque formation in *ApoE*$^{-/-}$ mice.[4]

References

1. Nakamura, Y., Yamamoto, N., Sakai, K., *et al.* Purification and characterization of angiotensin I-converting enzyme inhibitors from sour milk. *J. Dairy Sci.* **78(4)**, 777-783 (1995).
2. Hirota, T., Nonaka, A., Matsushita, A., *et al.* Milk casein-derived tripeptides, VPP and IPP induced NO production in cultured endothelial cells and endothelium-dependent relaxation of isolated aortic rings. *Heart Vessels* **26(5)**, 549-556 (2011).
3. Nakamura, Y., Yamamoto, N., Sakai, K., *et al.* Antihypertensive effect of sour milk and peptides isolated from it that are inhibitors to angiotensin I-converting enzyme. *J. Dairy Sci.* **78(6)**, 1253-1257 (1995).
4. Nakamura, T., Hirota, T., Mizushima, K., *et al.* Milk-derived peptides, Val-Pro-Pro and Ile-Pro-Pro, attenuate atherosclerosis development in apolipoprotein e-deficient mice: A preliminary study. *J. Med. Food* **16(5)**, 396-403 (2013).

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