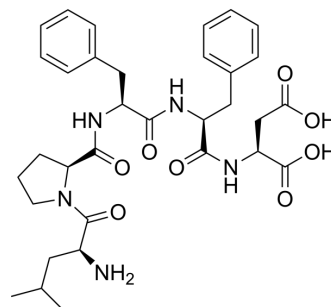


## β-Sheet Breaker Peptide iAβ5

<b>Cat. No.:</b>	HY-P1047
<b>CAS No.:</b>	182912-74-9
<b>Molecular Formula:</b>	C <sub>33</sub> H <sub>43</sub> N <sub>5</sub> O <sub>8</sub>
<b>Molecular Weight:</b>	637.72
<b>Sequence:</b>	Leu-Pro-Phe-Phe-Asp
<b>Sequence Shortening:</b>	LPFFD
<b>Target:</b>	Amyloid-β
<b>Pathway:</b>	Neuronal Signaling
<b>Storage:</b>	Sealed storage, away from moisture and light, under nitrogen
	Powder    -80°C    2 years
	-20°C    1 year



\* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)

### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 50 mg/mL (78.40 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.5681 mL	7.8404 mL	15.6809 mL
	5 mM	0.3136 mL	1.5681 mL	3.1362 mL
	10 mM	0.1568 mL	0.7840 mL	1.5681 mL

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

β-Sheet Breaker Peptide iAβ5 is a potent degrader of cerebral amyloid-beta (Aβeta). Aβeta deposition is associated with the Alzheimer disease (AD), due to its related toxicity linked to its beta-sheet conformation and/or aggregation. β-Sheet Breaker Peptide iAβ5 reproducibly induces in vivo disassembly of fibrillar amyloid deposits. Thus, β-Sheet Breaker Peptide iAβ5 prevents and/or reverses neuronal shrinkage caused by Aβeta, and reduces the extent of interleukin-1β positive microglia-like cells that surround the Aβeta deposits. β-Sheet Breaker Peptide iAβ5 reduces the size and/or number of cerebral amyloid plaques in AD. β-Sheet Breaker Peptide iAβ5 labeled by hydrophobic benzyl alcohol (HBA) tag, can be used for quantitative assay by showing vivid blue color under acidic conditions<sup>[1][2][3]</sup>.

#### In Vitro

β-Sheet Breaker Peptide iAβ5 (1.5 μg/μL; 7 days) incubates with Aβ1-42 (0.5 μg/μL) for 7 days, inhibits amyloid βprotein fibrillogenesis, disassembles preformed fibrils in vitro and prevents neuronal death induced by fibrils in cell culture<sup>[1]</sup>. β-Sheet Breaker Peptide iAβ5 (60 μM; 48 h) shows insignificant cytotoxicity in human neuroblastoma (IMR-32) cell treated

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	with 50 $\mu$ M aggregated A $\beta$ 1-42 for 2 days <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>In Vivo</b>	$\beta$ -Sheet Breaker Peptide iA $\beta$ 5 (100 nmol/rat; Intra-amygdala injection; 7 days) coinjected with A $\beta$ 1-42 (5 nmol) into the rat amygdala, blocks A $\beta$ 1-42 neurotoxicity in tissue culture, and amyloid fibril formation in the rat model <sup>[1]</sup> . $\beta$ -Sheet Breaker Peptide iA $\beta$ 5 (100 nmol/rat, 200 nmol/rat; Intra-amygdaloid injection; 7 days) followed by A $\beta$ 1-42 (5 nmol), induces disassembly of pre-existing A $\beta$ fibrils in vivo, and leads to a reversal or prevention of A $\beta$ -induced histopathological changes in rat model <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## REFERENCES

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- [1]. Sigurdsson EM, et al. In vivo reversal of amyloid-beta lesions in rat brain. *J Neuropathol Exp Neurol*. 2000 Jan;59(1):11-7.
- [2]. Okada Y, et al. Acid-Triggered Colorimetric Hydrophobic Benzyl Alcohols for Soluble Tag-Assisted Liquid-Phase Synthesis. *Org Lett*. 2015 Sep 4;17(17):4264-7.
- [3]. Soto C, et al. Beta-sheet breaker peptides inhibit fibrillogenesis in a rat brain model of amyloidosis: implications for Alzheimer's therapy. *Nat Med*. 1998 Jul;4(7):822-6.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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