# β-Amyloid (1-40) (rat)

**Cat. No.:** HY-P1387

**CAS No.:** 144409-98-3

**Molecular Formula:** $C_{190}H_{291}N_{51}O_{57}S$

**Molecular Weight:** 4233.76

**Sequence:** Asp-Ala-Glu-Phe-Gly-His-Asp-Ser-Gly-Phe-Glu-Val-Arg-His-Gln-Lys-Leu-Val-Phe-Phe-Al
a-Glu-Asp-Val-Gly-Ser-Asn-Lys-Gly-Ala-Ile-Ile-Gly-Leu-Met-Val-Gly-Gly-Val-Val

**Sequence Shortening:** DAEFGHDSGFEVRHQKLVFFAEDVGSNKGAIIGLMVGGVV

**Target:** Amyloid-β; Apoptosis

**Pathway:** Neuronal Signaling; Apoptosis

**Storage:** Sealed storage, away from moisture and light

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|---|---|---|
| Powder | -80°C | 2 years |
| | -20°C | 1 year |

* The compound is unstable in solutions, freshly prepared is recommended.

## BIOLOGICAL ACTIVITY

**Description**

β-Amyloid (1-40) (rat) is a rat form of the amyloid β-peptide, which accumulates as an insoluble extracellular deposit around neurons, giving rise to the senile plaques associated with Alzheimer's disease (AD). β-Amyloid (1-40) (rat) increases $^{45}Ca^{2+}$ influx, induces neurodegeneration in the rat hippocampal neurons of the CA1 subfield. β-Amyloid (1-40) (rat) induces apoptosis. β-Amyloid (1-40) (rat) can be used for the research of Alzheimer's disease[1][2].

**In Vitro**

β-Amyloid (1-40) (rat) (1 μM; 1 h) increases $^{45}Ca^{2+}$ influx and elevates $Ca^{2+}$ in cortical synaptosomes[1].
β-Amyloid (1-40) (rat) (3 nM) induces neurodegeneration in the rat hippocampal neurons of the CA1 subfield and induces apoptosis[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

β-Amyloid (1-40) (rat) (1.7 mg; ICV, for 7 d; swiss and C57BL/6 mice) induces the learning and memory deficits in mice[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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|---|---|
| Animal Model: | Swiss and C57BL/6 mice[3] |
| Dosage: | 1.7 mg |
| Administration: | Intracerebroventrical injection; for 7 days |
| Result: | Presented spatial learning and memory impairments. |

## CUSTOMER VALIDATION

- Sci Rep. 2023 Aug 21;13(1):13586.

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## REFERENCES

[1]. MacManus A, et, al. Enhancement of (45)Ca(2+) influx and voltage-dependent Ca(2+) channel activity by beta-amyloid-(1-40) in rat cortical synaptosomes and cultured cortical neurons. Modulation by the proinflammatory cytokine interleukin-1beta. J Biol Chem

[2]. Miguel-Hidalgo JJ, et, al. Beta-amyloid(1-40)-induced neurodegeneration in the rat hippocampal neurons of the CA1 subfield. Acta Neuropathol. 1998 May;95(5):455-65.

[3]. Prediger RD, et, al. Differential susceptibility following beta-amyloid peptide-(1-40) administration in C57BL/6 and Swiss albino mice: Evidence for a dissociation between cognitive deficits and the glutathione system response. Behav Brain Res. 2007 Feb 2



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