Aβ-IN-6

Cat. No.: HY-149246

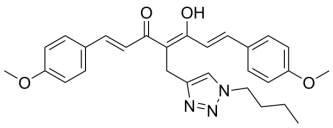
Molecular Formula: $C_{28}H_{31}N_3O_4$

Molecular Weight: 473.56

Target: Amyloid-β; Keap1-Nrf2

Pathway: Neuronal Signaling; NF-κB

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Aβ-IN-6 reduces pro-inflammatory cytokine release from microglia cells. Aβ-IN-6 significantly induces Nrf2 nuclear translocation and hamperes Aβ oligomers formation. Aβ-IN-6 exerts a consistent neuroprotective effect by modulating the redox-sensitive signalling pathways in vivo oxidative stress model. Aβ-IN-6 is an orally active and has antiinflammatory, Antioxidant and Anti-oligomeric activity. Aβ-IN-6 has the potential for Alzheimer's disease (AD) research[1].

In Vitro

Aβ-IN-6 (compound 4; 1-20 μM; 24 h) markedly reduces microglia viability starting from the concentration of 5 μM[1].
Aβ-IN-6 (1.25-40 μM; 24 h) causes significant cytotoxicity at concentrations higher than 2.5 μM in SH-SY5Y neuroblastoma cells[1].
Aβ-IN-6 (2.5 μM; 3 h) significantly induces Nrf2 nuclear translocation[1].
Aβ-IN-6 (2.5 μM) markedly suppresses the LPS-induced increase of mRNA levels of the two cytokines and NLRP3[1].
Aβ-IN-6 (1, 2.5 μM; protreamt for 1 h then stimulated with LPS for 24 h) significantly decreases LPS treatment induced the release of TNF-α and IL-1β[1].
Aβ-IN-6 (2.5 μM; for 24 h) before tert-butyl hydroperoxide (t-BuOOH; 50 μM for 30 min) reduces ROS formation with inhibition of around 18%[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Microglia
Concentration:	1-20 μM
Incubation Time:	24 h
Result:	Markedly reduced microglia viability starting from the concentration of 5 μM.

Cell Cytotoxicity Assay[1]

Cell Line:	SH-SY5Y neuroblastoma cells
Concentration:	1.25, 2.5, 5, 10, 20, 40 μM
Incubation Time:	24 h
Result:	Recorded significant cytotoxicity at concentrations higher than 2.5 μM.

Western Blot Analysis[1]

Cell Line:	SH-SY5Y cells
Concentration:	2.5 μM 3 hSignificantly induced Nrf2 nuclear translocation.SH-SY5Y cells2.5 μM
Incubation Time:	3 h
Result:	Significantly induced Nrf2 nuclear translocation.

RT-PCR[1]

Cell Line:	Microglia
Concentration:	2.5 μM
Incubation Time:	Pretreated for 1 h and then stimulated with 100 ng/mL LPS for 6 h
Result:	Markedly suppressed the LPS-induced increase of mRNA levels of the two cytokines and NLRP3, confirming the anti-inflammatory properties.

In Vivo

Aβ-IN-6 (compound 4; 10 μM; added to standard food) efficiently restored the increased ROS level in larval muscles and brains under neurodegenerative conditions (D-spastin loss of function model) to that observed for the control in Spastin Drosophila model[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Spastin Drosophila model[1]
Dosage:	10 μM
Administration:	Added to standard food (dissolved in DMSO)
Result:	Efficiently restored the increased ROS level in larval muscles and brains under neurodegenerative conditions (D-spastin loss of function model) to that observed for the control. Significantly ameliorated the phenotype associated with spastin reduction.

REFERENCES

[1]. Ersilia De Lorenzi, et al. Targeting the multifaceted neurotoxicity of Alzheimer's disease by tailored functionalisation of the curcumin scaffold. Eur J Med Chem. 2023 Apr 5;252:115297.

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