# AChE/BuChE-IN-1

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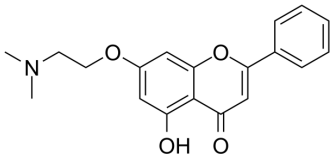
| **Cat. No.:** | HY-144392 |
| **CAS No.:** | 84212-49-7 |
| **Molecular Formula:** | $C_{19}H_{19}NO_4$ |
| **Molecular Weight:** | 325.36 |
| **Target:** | AChE |
| **Pathway:** | Neuronal Signaling |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |



## BIOLOGICAL ACTIVITY

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| **Description** | AChE/BuChE-IN-1 (Compound 1), a chrysin derivative, is a selective butyrylcholinesterase (BuChE) inhibitor with an $IC_{50}$ of 0.48 μM. AChE/BuChE-IN-1 inhibits acetylcholinesterase (AChE) with an $IC_{50}$ of 7.16 μM. AChE/BuChE-IN-1 shows strong scavenging ·OH activities with a $IC_{50}$ of 0.1674 μM. AChE/BuChE-IN-1 inhibits reactive oxygen species (ROS), $A\beta_{1-42}$ aggregation (self-, $Cu_{2+}$-induced, AChE-induced). AChE/BuChE-IN-1 has high BBB permeability and bioavailability and low cell toxicity. AChE/BuChE-IN-1 has the potential for Alzheimer' disease (AD) research[1]. |
| **In Vitro** | AChE/BuChE-IN-1 (Compound 1) is mixed-type inhibitor of competitive inhibition and non-competitive inhibition that can simultaneously bind to CAS and PAS of the AChE and BuChE enzyme. AChE/BuChE-IN-1 has no significant inhibitory effect in the ·DPPH scavenging assay ($IC_{50}$>500 μM)[1].<br>AChE/BuChE-IN-1 selectively chelates $Cu^{2+}$, $Fe^{2+}$, $Zn^{2+}$ and $Al^{3+}$ ions, while had no chelating ability to other biometals[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES

[1]. Aihong Yang, et al. A multifunctional anti-AD approach: Design, synthesis, X-ray crystal structure, biological evaluation and molecular docking of chrysin derivatives. Eur J Med Chem. 2022 Apr 5;233:114216.



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