

Alzheimer's Disease Research Products

Cayman offers a collection of tools that target the inhibition of β -amyloid peptide production and aggregation, as well as the prevention of tau protein phosphorylation and modification. Additional compounds purport to stave off dementia and improve cognitive function by targeting other various signaling pathways.

β -Amyloid

The β -amyloid peptide is derived from sequential proteolytic cleavage of the amyloid precursor protein (APP) by β - and γ -secretases. Initial cleavage by β -secretase (BACE), a membrane anchored aspartic protease, generates a soluble N-terminal fragment and a membrane-associated C-terminal fragment. The C-terminal fragment then undergoes proteolysis by γ -secretase to give the $A\beta$ peptide.

β -Amyloid (1-8, A2V) Peptide 10229

A truncated β -amyloid peptide with valine at amino acid position 2, a mutation found in the amyloid precursor protein (APP) resulting from Ala⁶⁷³ that leads to disease progression for homozygous carriers but not heterozygous carriers; biochemical analysis of $A\beta$ (1-42) aggregation suggests this small peptide may be a useful guide for developing β -amyloid peptide aggregation inhibitors

• Also Available: β -Amyloid (1-8) Peptide (10241)

Amyloid- β Monoclonal Antibody (Clone 6C3, MOAB-2) 11610

Antigen: oligomeric form of amyloid- β peptide ($A\beta$ 42)

• **Host:** mouse • **Isotype:** IgG_{2b} • **Application(s):** ELISA, ICC, IP, and WB

Methionine Sulfoxide

Protein methionine sulfoxide (MetO) is a reversible oxidative modification that occurs by exposure of protein(s) methionine residues to reactive oxygen species (ROS). Methionine oxidation can alter the function(s) of the modified proteins and if not reversed by MetO reductases can be further oxidized to methionine sulfone, an irreversible modification. The overabundance of methionine sulfoxidation is implicated in age-related diseases.

Methionine Sulfoxide Immunoblotting Kit 600160

Includes all the necessary components for the immunochemical detection of proteins containing MetO residues by western blotting

Includes MetO Polyclonal Antibody

- Isolated from rabbit serum generated after immunization with a oxidized corn protein (MetO-DZS18) rich in methionine
- Detected IgG-containing MetO from sera of Alzheimer's patients but not from normal control sera
- Specific for protein methionine sulfoxide

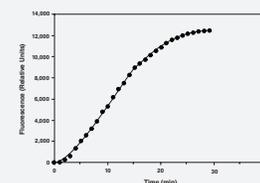
Methyltransferase Activity

Methylation of key biological molecules and proteins plays an important role in numerous biological systems. S-adenosylmethionine (SAM) dependent methyltransferases use SAM, also known as AdoMet, to donate a methyl group that is required for the modification of proteins and DNA. Aberrant levels of SAM have been linked to many abnormalities, including Alzheimer's disease, depression, Parkinson's disease, multiple sclerosis, liver failure, and cancer.

Methyltransferase Fluorometric Assay Kit 700150

Fluorometric assay for the continuous monitoring of SAM-dependent methyltransferases

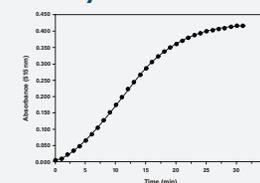
- Rate of H_2O_2 production measured with resorfin
- Ex. 530 - 540 nm
- Em. 585 - 595 nm



Methyltransferase Colorimetric Assay Kit 700140

Colorimetric assay for the continuous monitoring of SAM-dependent methyltransferases

- Rate of H_2O_2 production measured with 3,5-dichloro-2-hydroxybenzenesulfonic acid
- Increase in absorbance at 500-520 nm



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Additional Compounds

Item No.	Product Name	Summary
11001	(R,S)-Anatabine	Diminishes A β production, lowering the amount of A β 1-40 and A β 1-42 in a dose dependent manner in SHSY-5Y cells
13662	Arecoline (hydrobromide)	An agonist of the muscarinic acetylcholine receptors M $_1$, M $_2$, M $_3$, M $_4$, and M $_5$; has been shown to improve learning and memory and may prove to be useful in treating dementia
14000	Auraptene	Inhibits BACE1 activity with an IC $_{50}$ value of 345.1 μ M
16711	Avagacestat	A "Notch-sparing" γ -secretase inhibitor that prevents the cleavage of APP to A β 40 (IC $_{50}$ s = 0.30 and 58 nM, respectively)
16676	AZD 1080	Inhibits hippocampal tau phosphorylation and reverses cognitive deficits induced by the NMDA receptor antagonist MK-801
11571	Bexarotene	Stimulates clearance of soluble amyloid- β through RXR activation, reduces plaque area, and reverses deficits related to Alzheimer's disease in mice
10960	Bisdemethoxycurcumin	Interacts with 1 α ,25-dihydroxyvitamin D $_3$ to stimulate amyloid- β clearance by macrophages
15578	CHIR98014	Inhibits GSK3 α and GSK3 β (IC $_{50}$ s = 0.65 and 0.58 nM, respectively), reducing tau phosphorylation in rat brains
15579	Compound E	A potent, cell-permeable, and selective inhibitor of γ -secretase, blocking the cleavage of both APP and Notch CTFs with IC $_{50}$ values of ~0.3 nM
13197	DAPT	An inhibitor of γ -secretase, blocking the production of total A β in human primary neuronal cultures with an IC $_{50}$ value of 115 nM and A β 42 with an IC $_{50}$ value of 200 nM
14627	DBZ	A γ -secretase inhibitor that demonstrates anti-Alzheimer activity in an APP transgenic mouse model
9000556	Dimebolin	Inhibits the neurotoxic action of β -amyloid
13245	Donepezil	A reversible AChE inhibitor that readily crosses the blood-brain barrier to reduce the breakdown of acetylcholine
10007963	E-64	A natural, potent, and irreversible inhibitor of cysteine proteases
14704	GSK3 β Inhibitor VIII	Inhibits tau phosphorylation (IC $_{50}$ = 2.7 μ M) at a GSK3-specific site (Ser 396) in cells
13314	Indirubin-3'-monoxime	Inhibits GSK3 β (IC $_{50}$ = 22 nM), preventing tau phosphorylation
16706	MK 0752	A reversible inhibitor of γ -secretase that reduces cleavage of APP to A β 40 (IC $_{50}$ = 5 nM)
9001155	Piperlonguminine	Decreases expression of APP and amyloid β peptide in human neuroblastoma cells
14941	Quinolinic Acid	Promotes the formation of hyperphosphorylated tau proteins
13237	Thiamet G	Selective inhibitor of O-GlcNAcase (K $_i$ = 21 nM) that blocks phosphorylation of tau protein
16079	TPT-260 (hydrochloride)	Increases the level of retromer proteins, redirects APP from the endosome, and reduces the formation of pathogenic APP
10005836	bis(7)-Tacrine	An AChE inhibitor that is 1,000 times more potent than tacrine
13033	Valproic Acid (sodium salt)	An inhibitor of histone deacetylases and GSK3 that depletes cellular inositol-1,4,5-trisphosphate

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