
Product Data Sheet

Product Name: A 582941

Cat. No.: GC17805

Chemical Properties

Cas. No. 848591-90-2

Chemical Name (3aR,6aR)-2-methyl-5-(6-phenylpyridazin-3-yl)octahydropyrrolo[3,4-c]pyrrole

SMILES CN1C[C@H]2[C@@H](CN(C3=NN=C(C4=CC=CC=C4)C=C3)C2)C1Formula $C_{17}H_{20}N_4$ M.Wt 280.37

Solubility <28.04mg/ml in DMSO; <14.02mg/ml in 1eq. HCl Storage Desiccate at RT

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Background**

A 582941 is a highly selective partial agonist of $\alpha 7$ nicotinic acetylcholine receptors (nAChRs), with an EC50 value of 4260 nM to human $\alpha 7$ nAChRs [1].

nAChRs are a family of pentameric ligand-gated ion channels. They are derived from multiple α ($\alpha 2$ - $\alpha 10$) and β ($\beta 2$ - $\beta 4$) subunit genes. $\alpha 7$ nAChR receptor exhibits higher Ca^{2+} permeability than other nAChR combinations. These receptors modulate the release of multiple neurotransmitters, including acetylcholine (ACh), glutamate, and GABA [1].

In FLIPR, A 582941 did not activate recombinant heteromeric nAChRs ($\alpha 4\beta 2$, $\alpha 3\beta 2$, $\alpha 3\beta 4$, or $\alpha 4\beta 4$) according to Ca^{2+} dynamics results. In IMR-32 cells expressing native human $\alpha 3\beta 4$ nAChRs, A 582941 did not produce an agonist effect (with an efficacy less than 20% at concentrations up to 100,000 nM). In *Xenopus* oocytes expressing an $\alpha 9\alpha 10$ nAChR construct, A 582941 at concentrations up to 100,000 nM did not evoke currents. With respect to nAChRs, A 582941 activated only the homomeric $\alpha 7$ subtype [1].

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

In a rat model of short-term memory based on olfactory cues, saline-treated adults used investigation times during the second session nearly equal to the first session, exhibiting little recognition of the juvenile. Treatment with A 582941 in adult rats resulted in a dose-related reduction in the exploration time during the second session compared with the first session, exhibiting improved recognition of the juvenile [1].

Reference:

[1]. Tietje KR, Anderson DJ, Bitner RS, et al. Preclinical Characterization of A-582941: A Novel $\alpha 7$ Neuronal Nicotinic Receptor Agonist with Broad Spectrum Cognition-Enhancing Properties. CNS neuroscience & therapeutics, 2008, 14(1): 65-82.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA