

# Product data sheet



MedKoo Cat#: 524324 Name: AZD-0328 CAS#: 220099-91-2 Chemical Formula: C <sub>13</sub> H <sub>16</sub> N <sub>2</sub> O Exact Mass: 216.1263 Molecular Weight: 216.28	
Product supplied as: Powder	
Purity (by HPLC): ≥ 98%	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

## 1. Product description:

AZD-0328 is an alpha7 neuronal nicotinic receptor agonist.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
To be determined	To be determined	To be determined

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.62 mL	23.12 mL	46.24 mL
5 mM	0.92 mL	4.62 mL	9.25 mL
10 mM	0.46 mL	2.31 mL	4.62 mL
50 mM	0.09 mL	0.46 mL	0.92 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

- Zhou D, Zhang M, Ye X, Gu C, Piser TM, Lanoue BA, Schock SA, Cheng YF, Grimm SW. In vitro metabolism of  $\alpha 7$  neuronal nicotinic receptor agonist AZD0328 and enzyme identification for its N-oxide metabolite. *Xenobiotica*. 2011 Mar;41(3):232-42. doi: 10.3109/00498254.2010.536855. Epub 2011 Jan 13. PMID: 21226652.
- Ding M, Ghanekar S, Elmore CS, Zysk JR, Werkheiser JL, Lee CM, Liu J, Chhajlani V, Maier DL. [<sup>3</sup>H]Chiba-1001(methyl-SSR180711) has low in vitro binding affinity and poor in vivo selectivity to nicotinic alpha-7 receptor in rodent brain. *Synapse*. 2012 Apr;66(4):315-22. doi: 10.1002/syn.21513. Epub 2011 Dec 29. PMID: 22108786.

### In vivo study

- Sydserrff S, Sutton EJ, Song D, Quirk MC, Maciag C, Li C, Jonak G, Gurley D, Gordon JC, Christian EP, Doherty JJ, Hudzik T, Johnson E, Mrzljak L, Piser T, Smagin GN, Wang Y, Widzowski D, Smith JS. Selective alpha7 nicotinic receptor activation by AZD0328 enhances cortical dopamine release and improves learning and attentional processes. *Biochem Pharmacol*. 2009 Oct 1;78(7):880-8. doi: 10.1016/j.bcp.2009.07.005. Epub 2009 Jul 16. PMID: 19615981.
- Castner SA, Smagin GN, Piser TM, Wang Y, Smith JS, Christian EP, Mrzljak L, Williams GV. Immediate and sustained improvements in working memory after selective stimulation of  $\alpha 7$  nicotinic acetylcholine receptors. *Biol Psychiatry*. 2011 Jan 1;69(1):12-8. doi: 10.1016/j.biopsych.2010.08.006. Epub 2010 Oct 20. PMID: 20965497.

## 7. Bioactivity

Biological target:

# Product data sheet



AZD-0328 is a selective  $\alpha 7$  nicotinic receptor agonist that enhances cortical dopamine release and improves learning and attentional processes in rats.

## In vitro activity

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AZD-0328 showed stability in human hepatocyte incubations but underwent extensive metabolism in other species. Primary metabolites included the N-oxidation metabolite (M6) and an N-glucuronide metabolite in human liver microsomes. Various preclinical species displayed additional metabolic pathways.

Reference: Xenobiotica. 2011 Mar;41(3):232-42. <https://pubmed.ncbi.nlm.nih.gov/21226652/>

## In vivo activity

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AZD-0328 may hold therapeutic promise for conditions characterized by cognitive deficits and dopamine neuron dysfunction in neurologic and psychiatric contexts. In rat brain recordings, AZD-0328 increased the firing of putative dopamine neurons in the ventral tegmental area. In awake rats, AZD-0328 led to elevated prefrontal cortical dopamine levels. AZD-0328 improved operant responding with delayed reinforcement in rats and enhanced novel object recognition in mice.

Reference: Biochem Pharmacol. 2009 Oct 1;78(7):880-8. doi: 10.1016/j.bcp.2009.07.005. <https://pubmed.ncbi.nlm.nih.gov/19615981/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*