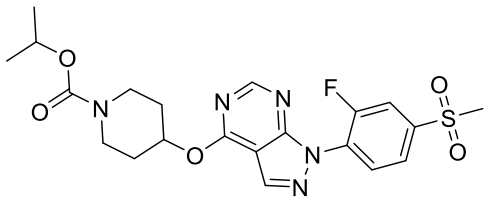
Product data sheet

MedKoo Cat#: 510309 Name: APD668 CAS#: 832714-46-2 Chemical Formula: $C_{21}H_{24}FN_5O_5S$ Exact Mass: 477.14822 Molecular Weight: 477.51	
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:
APD668, also known as JNJ-28630368, is a potent GPR119 agonist with EC50 of 2.7 nM and 33 nM for hGPR119 and ratGPR119 respectively. Receptor GPR119 is a target that has been of significant recent interest in the field of metabolism. ADP668 showed activity to reduce blood glucose and glycated hemoglobin (HbA1c) levels in Zucker Diabetic Fatty (ZDF) rats over several weeks of dosing. ADP668 is currently under clinical trial for diabetes.

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
DMSO	49.78	104.25
DMF	25.0	52.35
DMF:PBS (pH 7.2) (1:8)	0.1	0.21
Ethanol	2.0	4.19

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.09 mL	10.47 mL	20.94 mL
5 mM	0.42 mL	2.09 mL	4.19 mL
10 mM	0.21 mL	1.05 mL	2.09 mL
50 mM	0.04 mL	0.21 mL	0.42 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

1. Semple G, Ren A, Fioravanti B, Pereira G, Calderon I, Choi K, Xiong Y, Shin YJ, Gharbaoui T, Sage CR, Morgan M, Xing C, Chu ZL, Leonard JN, Grottick AJ, Al-Shamma H, Liang Y, Demarest KT, Jones RM. Discovery of fused bicyclic agonists of the orphan G-protein coupled receptor GPR119 with in vivo activity in rodent models of glucose control. Bioorg Med Chem Lett. 2011 May 15;21(10):3134-41. doi: 10.1016/j.bmcl.2011.03.007. Epub 2011 Mar 13. PMID: 21444206.

In vivo study

1. Bahirat UA, Shenoy RR, Goel RN, Nemmani KV. APD668, a G protein-coupled receptor 119 agonist improves fat tolerance and attenuates fatty liver in high-trans fat diet induced steatohepatitis model in C57BL/6 mice. Eur J Pharmacol. 2017 Apr 15;801:35-45. doi: 10.1016/j.ejphar.2017.02.043. Epub 2017 Mar 6. PMID: 28274625.
2. Semple G, Ren A, Fioravanti B, Pereira G, Calderon I, Choi K, Xiong Y, Shin YJ, Gharbaoui T, Sage CR, Morgan M, Xing C, Chu ZL, Leonard JN, Grottick AJ, Al-Shamma H, Liang Y, Demarest KT, Jones RM. Discovery of fused bicyclic agonists of the orphan

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G-protein coupled receptor GPR119 with in vivo activity in rodent models of glucose control. Bioorg Med Chem Lett. 2011 May 15;21(10):3134-41. doi: 10.1016/j.bmcl.2011.03.007. Epub 2011 Mar 13. PMID: 21444206.

7. Bioactivity

Biological target:

APD668 is an agonist of G-protein coupled receptor GPR119, with EC50s of 2.7 nM and 33 nM for hGPR119 and rGPR119, respectively.

In vitro activity

Thus, 3k (APD668) was shown to increase adenylate cyclase activation in HEK293 cells transfected with human GPR119 (but not in non-transfected cells) in a concentration-dependent manner with an EC50 of 23 nM. Compound 3k also enhanced insulin release from both rat and human isolated pancreatic islets in a glucose-dependent manner as previously observed for 1a.1 In a standard panel of around 80 known receptors and ion channels, 3k did not show any binding in excess of 50% of control to any other proteins at concentrations up to 10 μM.

Reference: Bioorg Med Chem Lett. 2011 May 15;21(10):3134-41. https://pubmed.ncbi.nlm.nih.gov/21444206/

In vivo activity

To investigate the effect of APD668 on intestinal lipid absorption, this study conducted an oral fat tolerance test in normal mice. As shown in Fig. 1A, olive oil administration elevated plasma triglyceride levels in vehicle treated mice. Treatment with APD668 (30 mg/kg, p.o.) reduced the elevated plasma triglyceride levels at 2 h as compared to vehicle treated mice ($P<0.001$). Next, this study calculated area under curve and APD668 significantly inhibited the lipid excursion by approximately 42% in mice (Fig. 1A and B).

Reference: Eur J Pharmacol. 2017 Apr 15;801:35-45. https://pubmed.ncbi.nlm.nih.gov/28274625/