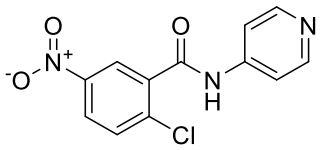
Product data sheet

MedKoo Cat#: 406129 Name: T0070907 CAS#: 313516-66-4 Chemical Formula: $C_{12}H_8ClN_3O_3$ Exact Mass: 277.02542 Molecular Weight: 277.66	
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:

T0070907 was identified as a potent and selective PPARgamma antagonist. With an apparent binding affinity (concentration at 50% inhibition of [(3)H]rosiglitazone binding or IC(50)) of 1 nm, T0070907 covalently modifies PPARgamma on cysteine 313 in helix 3 of human PPARgamma2. T0070907 blocked PPARgamma function in both cell-based reporter gene and adipocyte differentiation assays. T0070907 is a novel tool for the study of PPARgamma/RXRalpha heterodimer function.

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	25.7	92.56
DMF	10.0	36.02
DMF:PBS (pH 7.2) (1:4)	0.2	0.72

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.60 mL	18.01 mL	36.02 mL
5 mM	0.72 mL	3.60 mL	7.20 mL
10 mM	0.36 mL	1.80 mL	3.60 mL
50 mM	0.07 mL	0.36 mL	0.72 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. An Z, Muthusami S, Yu JR, Park WY. T0070907, a PPAR γ inhibitor, induced G2/M arrest enhances the effect of radiation in human cervical cancer cells through mitotic catastrophe. Reprod Sci. 2014 Nov;21(11):1352-61. doi: 10.1177/1933719114525265. Epub 2014 Mar 18. PMID: 24642720; PMCID: PMC4212328.
2. Kawahara A, Haraguchi N, Tsuchiya H, Ikeda Y, Hama S, Kogure K. Peroxisome proliferator-activated receptor γ (PPARγ)-independent specific cytotoxicity against immature adipocytes induced by PPARγ antagonist T0070907. Biol Pharm Bull. 2013;36(9):1428-34. doi: 10.1248/bpb.b13-00024. PMID: 23995653.

In vivo study

1. Li X, Ning L, Ma J, Xie Z, Zhao X, Wang G, Wan X, Qiu P, Yao T, Wang H, Fan S, Wan S. The PPAR-γ antagonist T007 inhibits RANKL-induced osteoclastogenesis and counteracts OVX-induced bone loss in mice. Cell Commun Signal. 2019 Oct 26;17(1):136. doi: 10.1186/s12964-019-0442-3. PMID: 31655621; PMCID: PMC6815399.

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2. Chen T, Zhang Y, Liu Y, Zhu D, Yu J, Li G, Sun Z, Wang W, Jiang H, Hong Z. MiR-27a promotes insulin resistance and mediates glucose metabolism by targeting PPAR-γ-mediated PI3K/AKT signaling. Aging (Albany NY). 2019 Sep 28;11(18):7510-7524. doi: 10.18632/aging.102263. Epub 2019 Sep 28. PMID: 31562809; PMCID: PMC6781997.

7. Bioactivity

Biological target:

T0070907 is a potent PPARγ antagonist with a Ki of 1 nM.

In vitro activity

Hence, the impact of radiation on the induction of apoptosis was evaluated in ME180 (Figure 5A and B) and HeLa cells (Figure 5C and D) treated with or without T0070907. Radiation failed to significantly increase the apoptosis in both cell lines tested; however, T0070907 promoted apoptosis in ME180 cells and the apoptosis was maximum in both HeLa and ME180 cells treated with T0070907 and radiation. T0070907 has promoted the induction of protein levels of p53 by radiation suggesting the radiosensitizing effect of T0070907 in ME180 cervical cancer cells is p53 dependent (Figure 5E).

Reference: Reprod Sci. 2014 Nov; 21(11): 1352–1361. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4212328/

In vivo activity

The treatment of mice with T007 (T0070907) decreased the levels of these osteoclastogenesis genes in a dose-dependent fashion compared to the osteoporosis animals administered with the vehicle (Fig. 10c). Moreover, T007 treatment significantly increased the mRNA and protein expression levels of OPG in OVX-induced bone loss models, while inhibiting RANKL expression and the ratio of RANKL/OPG (Fig. 10d-f). This implied that T007 prevents from OVX-induced bone loss.

Reference: Cell Commun Signal. 2019; 17: 136. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6815399/

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.