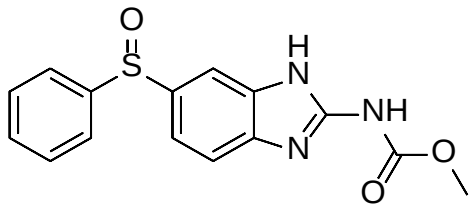
Product data sheet

MedKoo Cat#: 462880 Name: Oxfendazole CAS: 53716-50-0 Chemical Formula: $C_{15}H_{13}N_3O_3S$ Exact Mass: 315.0678 Molecular Weight: 315.347	
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:
Oxfendazole is a benzimidazole anthelmintic. In vivo, oxfendazole is curative in pig models of H. rubidus or A. suum infection when administered at doses of 3 and 6 mg/kg, respectively. It is lethal to H. contortus and T. circumcincta when administered to infected cattle. Formulations containing oxfendazole have been used in the treatment and prevention of helminth infections in livestock.

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	14.08	44.66
DMSO:PBS (pH 7.2) (1:4)	0.20	0.63
Water	0.67	2.12

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.17 mL	15.86 mL	31.71 mL
5 mM	0.63 mL	3.17 mL	6.34 mL
10 mM	0.32 mL	1.59 mL	3.17 mL
50 mM	0.06 mL	0.32 mL	0.63 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. Xu D, Tian W, Jiang C, Huang Z, Zheng S. The anthelmintic agent oxfendazole inhibits cell growth in non-small cell lung cancer by suppressing c-Src activation. Mol Med Rep. 2019 Apr;19(4):2921-2926. doi: 10.3892/mmr.2019.9897. Epub 2019 Jan 28. PMID: 30720086.

In vivo study

1. Dewa Y, Nishimura J, Muguruma M, Jin M, Kawai M, Saegusa Y, Okamura T, Umemura T, Mitsumori K. Involvement of oxidative stress in hepatocellular tumor-promoting activity of oxfendazole in rats. Arch Toxicol. 2009 May;83(5):503-11. doi: 10.1007/s00204-008-0349-z. Epub 2008 Aug 27. PMID: 18754104.

2. Gleizes C, Eeckhoutte C, Pineau T, Alvinerie M, Galtier P. Inducing effect of oxfendazole on cytochrome P450IA2 in rabbit liver. Consequences on cytochrome P450 dependent monooxygenases. Biochem Pharmacol. 1991 Jun 15;41(12):1813-20. doi: 10.1016/0006-2952(91)90119-p. PMID: 2039538.

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7. Bioactivity

Biological target:

Oxfendazole is the sulfoxide form of fenbendazole which is a broad spectrum benzimidazole anthelmintic.

In vitro activity

Oxfendazole also suppressed the cell growth of non-small cell lung cancer (NSCLC) cells, and overexpression of c-Src decreased the cytotoxicity of oxfendazole against NSCLC cells. In addition, oxfendazole induced cell cycle arrest at the G0/G1 phase, and downregulated the protein levels of Cyclin-dependent kinase (CDK)-4, CDK6, retinoblastoma protein and E2 transcription factor 1, and upregulated the expression levels of p53 and p21 in NSCLC cells.

Reference: Mol Med Rep. 2019 Apr;19(4):2921-2926. https://pubmed.ncbi.nlm.nih.gov/30720086/

In vivo activity

The numbers and areas of glutathione S-transferase placental form (GST-P)-positive foci were significantly increased in the livers of rats treated with OX (oxfendazole), with concomitantly increased cell proliferation, compared with those in the livers of the DEN alone group. Quantitative real-time RT-PCR analysis revealed that OX induced not only mRNA expression of phase I enzymes Cyp1a1, Cyp1a2, but also Nrf2-regulated phase II enzymes such as Gpx2, Nqo1, Yc2, Akr7a3 and Gstm1, presumably due to an adaptive response against OX-induced oxidative stress. Reactive oxygen species production increased in microsomes isolated from the livers of OX-treated rats.

Reference: Arch Toxicol. 2009 May;83(5):503-11. https://pubmed.ncbi.nlm.nih.gov/18754104/

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.