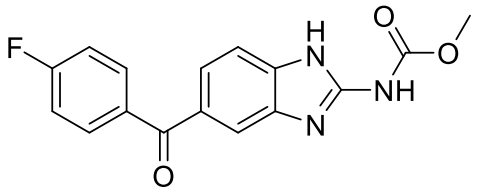
Product data sheet

MedKoo Cat#: 540137 Name: Flubendazole CAS#: 31430-15-6 Chemical Formula: $C_{16}H_{12}FN_3O_3$ Exact Mass: 313.0863 Molecular Weight: 313.28	
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:
Flubendazole is a microtuble polymerization inhibitor. It suppresses growth of Haemonchus and Trichomonas and decreases viability of myeloma cells.

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	4.17	13.31

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.19 mL	15.96 mL	31.92 mL
5 mM	0.64 mL	3.19 mL	6.38 mL
10 mM	0.32 mL	1.60 mL	3.19 mL
50 mM	0.06 mL	0.32 mL	0.64 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. Elissondo M, Dopchiz M, Ceballos L, Alvarez L, Sánchez Bruni S, Lanusse C, Denegri G. In vitro effects of flubendazole on Echinococcus granulosus protoscoleces. Parasitol Res. 2006 Mar;98(4):317-23. doi: 10.1007/s00436-005-0026-6. Epub 2005 Dec 22. PMID: 16374619.

In vivo study

1. Longo M, Zanoncelli S, Messina M, Scandale I, Mackenzie C, Geary T, Marsh K, Lindley D, Mazué G. In vivo preliminary investigations of the effects of the benzimidazole anthelmintic drug flubendazole on rat embryos and fetuses. Reprod Toxicol. 2014 Nov;49:33-42. doi: 10.1016/j.reprotox.2014.06.009. Epub 2014 Jun 30. PMID: 24994687.

2. Yoshimura H. Effect of oral dosing vehicles on the developmental toxicity of flubendazole in rats. Reprod Toxicol. 2003 Jul-Aug;17(4):377-85. doi: 10.1016/s0890-6238(03)00033-9. PMID: 12849847.

7. Bioactivity
Biological target:

Flubendazole (Flumoxanal, NSC 313680) is an autophagy inducer by targeting Atg4B.

In vitro activity

Product data sheet

The aim of the present work was to determine the in vitro protoscolicidal effect of flubendazole (FLBZ) against Echinococcus granulosus. Protoscoleces of E. granulosus were incubated with FLBZ at concentrations of 10, 5 and 1 microg/ml. The first signs of FLBZ-induced damage were observed 3 days post-incubation. A clear protoscolicidal effect, reducing the vitality of protoscoleces to 35.6+/-0.7%, was observed after 18 days of incubation. After 25 days of FLBZ incubation (5 microg/ml), the percentage of vital protoscoleces was 13.9+/-5.9%. Protoscolex mortality was 100% (10 and 1 microg/ml) and 0.7+/-0.7% (5 microg/ml) after FLBZ incubation for 30 days. Results of vitality tests were consistent with the tissue damage observed at the ultrastructural level. The primary site of damage was the tegument of the parasite. The morphological changes included contraction of the soma region, formation of blebs on the tegument, rostellar disorganization, loss of hooks and destruction of microtriches. The data reported in this article demonstrate a clear in vitro effect of FLBZ against E. granulosus protoscoleces.

Reference: Parasitol Res. 2006 Mar;98(4):317-23. https://dx.doi.org/10.1007/s00436-005-0026-6

In vivo activity

To investigate embryotoxic activity, the new flubendazole formulation was administered orally to Sprague Dawley rats at 2, 3.46, 6.32mg/kg/day on gestation day (GD) 9.5 and 10.5. Embryos/fetuses were evaluated on GD 11.5, 12.5 or 20. At 6.32mg/kg/day (Cmax=0.801µg/mL after single administration), flubendazole initially induced an arrest of embryonic development followed by a generalized cell death that led to 100% embryolethality by GD 12.5. At 3.46mg/kg/day (Cmax=0.539µg/mL after single administration), flubendazole markedly reduced embryonic development by GD 12.5 without causing cell death. On GD 20, 80% of fetuses showed malformations. At 2mg/kg/day (Cmax=0.389µg/mL after single administration), it did not interfere with rat embryofetal development.

Reference: Reprod Toxicol. 2014 Nov;49:33-42. https://linkinghub.elsevier.com/retrieve/pii/S0890-6238(14)00110-5