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产品名称：MONEPANTEL
产品别名： AAD1566

生物活性：

Description	Monepantel is organic anthelmintic, and acts as a positive allosteric modulator of a nematode-specific clade of nicotinic acetylcholine receptor (nAChR) subunits.
In Vitro	The metallocenyl analogues of monepantel shows nematocidal activity[1]. Monepantel (25 μM) induces accumulation of acidic vacuoles. Ovarian cancer cell lines are highly sensitive to Monepantel with IC50 values of 7.2±0.2 μM (OVCAR-3) and 10.5±0.4 μM (A2780). Monepantel (0, 10 and 25 μM) induces autophagosome formation in these cancer cell lines. Monepantel (0, 10 and 25 μM) exhibits a markedly reduced level of punctate staining indicating the suppression of phosphorylated mTOR at Ser2448. Monepantel also decreases the expression of phosphorylated Raptor at Ser792, which is one of the mTORC1 coMonepantelex members[2]. Monepantel (250 μg/mL) leads multiple ABC transporter genes higher transcription in both worm isolates. Larvae exposed to monepantel at 250 μg/mL shows an increased efflux of rhodamine-123 and a proportion of the larval population shows an ability to subsequently tolerate higher concentrations of IVM in migration assays[3].
In Vivo	Monepantel (10 μM) significantly increased all CYP-related activities and CYP3A24 mRNA in sheep[4].

Solvent&Solubility

In Vitro:

DMSO : ≥ 100 mg/mL (211.24 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1124 mL	10.5621 mL	21.1242 mL
	5 mM	0.4225 mL	2.1124 mL	4.2248 mL
	10 mM	0.2112 mL	1.0562 mL	2.1124 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: 2.5 mg/mL (5.28 mM); Suspended solution; Need ultrasonic

此方案可获得 2.5 mg/mL (5.28 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。

以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。

	2.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (5.28 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (5.28 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Hess J, et al. Assessment of the nematocidal activity of metallocenyl analogues of monepantel. Dalton Trans. 2016 Nov 28;45(44):17662-17671. [2]. Bahrami F, et al. Monepantel induces autophagy in human ovarian cancer cells through disruption of the mTOR/p70S6K signalling pathway. Am J Cancer Res. 2014 Sep 6;4(5):558-71. [3]. Raza A, et al. Increased expression of ATP binding cassette transporter genes following exposure of Haemonchus contortus larvae to a high concentration of monepantel in vitro. Parasit Vectors. 2016 Sep 29;9(1):522. [4]. Stuchlikova, et al. Monepantel induces hepatic cytochromes p450 in sheep in vitro and in vivo. Chem Biol Interact. 2015 Feb 5;227:63-8.
实验参考：	
Cell Assay	The effect of monepantel with or without other agents on cell proliferation is assessed using the sulforhodamine B (SRB) assay. Briefly, cells are seeded in 96-well plates (2500 cells/well) overnight followed by treatment with desired concentrations of Monepantel. After 72 h cells are fixed with 200 μL of 0.1% TCA, washed with tap water and stained with 100 μL of 0.4% (w/v) SRB dissolved in 1% acetic acid. Unbound dye is removed by five ishes with 1% acetic acid before air drying. Bound SRB is solubilized with 100 μL of 10 mM Tris base (pH 10.5) and the absorbance read at 570 nm. Each concentration is tested in replications of 8 and each experiment is repeated twice. Data represent mean±SEM from two independent experiments combined. [2]
Kinase Assay	Caspase-3 and -8 colorimetric assay kits are used according to the manufacturer's instructions. Briefly, after treatment the cells with indicated concentration of Monepantel (0, 10 and 25 μM) for 48 and 72 h, cells are harvested, centrifuged at 250 g for 10 min. The cell pellet lysed by the addition of the lyses buffer, then incubated on ice for 10 min followed by centrifugation at 10,000 g for 5 min. The supernatant is used to start the enzymatic reaction in 96 well plates based on manufacturer protocol. Each concentration is tested in replications of 4 and each experiment is repeated twice. [2]
References	[1]. Hess J, et al. Assessment of the nematocidal activity of metallocenyl analogues of monepantel. Dalton Trans. 2016 Nov 28;45(44):17662-17671. [2]. Bahrami F, et al. Monepantel induces autophagy in human ovarian cancer cells through disruption of the mTOR/p70S6K signalling pathway. Am J Cancer Res. 2014 Sep 6;4(5):558-71. [3]. Raza A, et al. Increased expression of ATP binding cassette transporter genes following exposure of Haemonchus contortus larvae to a high concentration of monepantel in vitro. Parasit Vectors. 2016 Sep 29;9(1):522. [4]. Stuchlikova, et al. Monepantel induces hepatic cytochromes p450 in sheep in vitro and in vivo. Chem Biol Interact. 2015 Feb 5;227:63-8.