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产品名称：Upadacitinib
产品别名：乌帕替尼；ABT-494

生物活性：

Description

Upadacitinib (ABT-494) is a potent, orally active and selective Janus kinase 1 (JAK1) inhibitor (IC50=43 nM). Upadacitinib (ABT-494) displays approximately 74 fold selective for JAK1 over JAK2 (200 nM) in cellular assays dependent on specific, relevant cytokines. Upadacitinib (ABT-494) is used in development for the treatment of several autoimmune disorders[1][2].

IC_{50} & Target

JAK1	JAK2	JAK3	Tyk2
0.043 μM (IC_{50})	0.2 μM (IC_{50})	2.3 μM (IC_{50})	4.7 μM (IC_{50})

In Vitro

In biochemical assays, Upadacitinib is 74-fold more selective for JAK-1 than for JAK-2 (which is involved in erythropoiesis) and 58-fold more selective for JAK-1 than for JAK-3 (which is involved in immunosurveillance)[1]. The enhanced selectivity of Upadacitinib for JAK-1 over JAK-2 and JAK-3 may offer an improved benefit–risk profile in patients with RA range[2].

In Vivo

Upadacitinib (0.1-10 mg/kg; oral gavage; twice a day for 10 days) demonstrates efficacy in rat arthritis models[3].

Animal Model:	Female Lewis rats (Rat adjuvant-induced arthritis model)[3]
Dosage:	0.1, 0.3, 1, 3, 10 mg/kg
Administration:	Oral gavage; twice a day for 10 days
Result:	Inhibits disease pathology in rat adjuvant induced arthritis.

Solvent&Solubility

In Vitro:

DMSO : ≥ 22 mg/mL (57.84 mM)

H_2O : < 0.1 mg/mL (insoluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6290 mL	13.1451 mL	26.2902 mL
	5 mM	0.5258 mL	2.6290 mL	5.2580 mL
	10 mM	0.2629 mL	1.3145 mL	2.6290 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: ≥ 1.67 mg/mL (4.39 mM); Clear solution

	此方案可获得 ≥ 1.67 mg/mL (4.39 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 16.699999 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% (20% SBE-β-CD in saline) Solubility: ≥ 1.67 mg/mL (4.39 mM); Clear solution 此方案可获得 ≥ 1.67 mg/mL (4.39 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 16.699999 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 1.67 mg/mL (4.39 mM); Clear solution 此方案可获得 ≥ 1.67 mg/mL (4.39 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 16.699999 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Nakayamada S, et al. Recent Progress in JAK Inhibitors for the Treatment of Rheumatoid Arthritis. BioDrugs. 2016 Oct;30(5):407-419. [2]. J. Voss, et al. THU0127 Pharmacodynamics of A Novel JAK1 Selective Inhibitor in Rat Arthritis and Anemia Models and in Healthy Human Subjects. doi 10.1136/annrheumdis-2014-eular.3823. [3]. Parmentier JM, et al. In vitro and in vivo characterization of the JAK1 selectivity of upadacitinib (ABT-494). BMC Rheumatol. 2018 Aug 28;2:23.