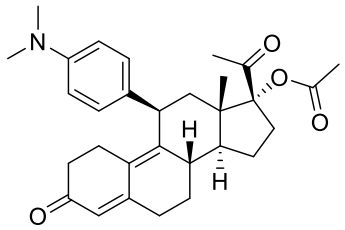
Product data sheet

MedKoo Cat#: 319944 Name: Ulipristal acetate CAS#: 126784-99-4 Chemical Formula: $C_{30}H_{37}NO_4$ Exact Mass: 475.2723 Molecular Weight: 475.629	
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:

Ulipristal acetate, also known as CDB-2914, is a selective progesterone receptor modulator (SPRM) approved for contraception, and for uterine fibroid. As a SPRM, ulipristal acetate has partial agonistic as well as antagonistic effects on the progesterone receptor. It also binds to the glucocorticoid receptor, but is only a weak antiglucocorticoid relative to mifepristone, and has no relevant affinity to the estrogen, androgen and mineralocorticoid receptors.

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	56.5	118.79
DMF	30.0	63.07
Ethanol	22.0	46.25
Ethanol:PBS (pH 7.2) (1:1)	0.2	0.42

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.10 mL	10.51 mL	21.02 mL
5 mM	0.42 mL	2.10 mL	4.20 mL
10 mM	0.21 mL	1.05 mL	2.10 mL
50 mM	0.04 mL	0.21 mL	0.42 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. Del Bello B, Marcolongo P, Ciarmela P, Sorbi F, Petraglia F, Luisi S, Maellaro E. Autophagy up-regulation by ulipristal acetate as a novel target mechanism in the treatment of uterine leiomyoma: an in vitro study. Fertil Steril. 2019 Dec;112(6):1150-1159. doi: 10.1016/j.fertnstert.2019.08.007. PMID: 31843092.

2. Shin SJ, Kim J, Lee S, Baek J, Lee JE, Cho C, Ha E. Ulipristal acetate induces cell cycle delay and remodeling of extracellular matrix. Int J Mol Med. 2018 Oct;42(4):1857-1864. doi: 10.3892/ijmm.2018.3779. Epub 2018 Jul 17. PMID: 30015921; PMCID: PMC6108884.

In vivo study

1. Small B, Millard CEF, Kisanga EP, Burman A, Anam A, Flannery C, Al-Hendy A, Whirledge S. The Selective Progesterone Receptor Modulator Ulipristal Acetate Inhibits the Activity of the Glucocorticoid Receptor. J Clin Endocrinol Metab. 2020 Mar 1;105(3):716–34. doi: 10.1210/clinem/dgz139. PMID: 31665442; PMCID: PMC7112983.

2. Gómez-Elías MD, Munuce MJ, Bahamondes L, Cuasnicú PS, Cohen DJ. In vitro and in vivo effects of ulipristal acetate on fertilization and early embryo development in mice. Hum Reprod. 2016 Jan;31(1):53-9. doi: 10.1093/humrep/dev287. Epub 2015 Nov 17. PMID: 26582845.

7. Bioactivity

Biological target:

Ulipristal acetate (CDB-2914, HRP 2000, RU 44675) is a selective SPRM for emergency contraception.

In vitro activity

As shown in Figure 2A and 2B, normal myometrial cells were not significantly affected by 5 μM UPA (Ulipristal). On the contrary, in UPA-treated leiomyoma cells both the LC3-II level and the LC3-II:LC3-I ratio were significantly increased compared with untreated, control cells. The autophagic process occurring in leiomyoma cells was also confirmed by cotreating cells with CQ, which inhibits the fusion of autophagosomes with lysosomes, thus inhibiting the clearance of LC3-II. The resulting further accumulation of LC3-II indicates that an autophagic flux is actually taking place. As shown in Figure 2C, the cotreatment with CQ increased LC3-II protein level in leiomyoma cells, particularly in UPA-treated ones, suggesting that UPA actually stimulated the autophagic flux.

Reference: Fertil Steril. 2019 Dec;112(6):1150-1159. https://pubmed.ncbi.nlm.nih.gov/31843092/

In vivo activity

To define the physiological significance of ulipristal on glucocorticoid signaling in vivo, this study exposed female C57Bl/6 mice to 2 mg/kg ulipristal for 4 hours. Acute exposure to ulipristal resulted in tissue-specific effects on basal glucocorticoid signaling, including antagonist, agonist, and no effects. In the lung, ulipristal significantly reduced transcript levels of Per1 and Fkbp5 but not Gilz (Fig. 8A). Consistent with the findings in Hepg2 and UtLM cells, transcript levels of Per1, Fkbp5, and Gilz were significantly decreased by ulipristal in the liver and the uterus (Fig. 8A). However, no effect of ulipristal exposure was evident on the basal expression of the glucocorticoid-responsive genes Per1, Fkbp5, and Gilz in the spleen (Fig. 8B). Interestingly, exposure to ulipristal induced the expression of Fkbp5 and Gilz mRNA in the hippocampus and pituitary (Fig. 8C), suggesting that ulipristal may act as an agonist of glucocorticoid signaling in certain tissues.

Reference: J Clin Endocrinol Metab. 2020 Mar; 105(3): 716–734. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7112983/

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.