# **Product data sheet**



MedKoo Cat#: 318194				
Name: Mestranol				
CAS: 72-33-3				
Chemical Formula: $C_{21}H_{26}O_2$				
Exact Mass: 310.1933				
Molecular Weight: 310.437				
Product supplied as:	Powder			
Purity (by HPLC):	$\geq 98\%$			
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:

Mestranol is an Estrogen. The mechanism of action of mestranol is as an Estrogen Receptor Agonist. It is used as the estrogen component of many combination oral contraceptives.

## 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	24.17	77.84		
Ethanol	13.0	41.88		
Water	0.67	2.16		

#### 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.22 mL	16.11 mL	32.21 mL
5 mM	0.64 mL	3.22 mL	6.44 mL
10 mM	0.32 mL	1.61 mL	3.22 mL
50 mM	0.06 mL	0.32 mL	1.61 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. Nagaraj V, Mikhail M, Baronio M, Gatto A, Nayak A, Theis T, Cavallaro U, Schachner M. Antagonistic L1 Adhesion Molecule Mimetic Compounds Inhibit Glioblastoma Cell Migration In Vitro. Biomolecules. 2022 Mar 12;12(3):439. doi: 10.3390/biom12030439. PMID: 35327631; PMCID: PMC8946856.

2. Jiang SY, Shyu RY, Yeh MY, Jordan VC. Tamoxifen inhibits hepatoma cell growth through an estrogen receptor independent mechanism. J Hepatol. 1995 Dec;23(6):712-9. doi: 10.1016/0168-8278(95)80038-7. PMID: 8750171.

#### In vivo study

1. Dragan YP, Singh J, Pitot HC. Effect of the separate and combined administration of mestranol and phenobarbital on the development of altered hepatic foci expressing placental form of glutathione S-transferase in the rat. Carcinogenesis. 1996 Sep;17(9):2043-52. doi: 10.1093/carcin/17.9.2043. PMID: 8824533.

2. Shackelford DP Jr, McConnaughey MM, Iams SG. The effects of estradiol and mestranol on alpha-adrenoceptors in select regions of the rat brain. Brain Res Bull. 1988 Aug;21(2):329-33. doi: 10.1016/0361-9230(88)90249-3. PMID: 2847856.

# **Product data sheet**



# 7. Bioactivity

Biological target:

Mestranol acts as an estrogen receptor agonist.

### In vitro activity

In the human hepatoma cell line Hep 3B, tamoxifen inhibited cell growth in a concentration and time-dependent manner with effective concentrations ranging from 0.1 microM to 10 microM. Mestranol inhibited cell growth at a concentration of 10 microM and had an additive effect with tamoxifen on growth inhibition.

Reference: J Hepatol. 1995 Dec;23(6):712-9. https://pubmed.ncbi.nlm.nih.gov/8750171/

In vivo activity

In this study brain alpha-1 and alpha-2-adrenoceptor binding was measured in female rats treated with estradiol and/or the synthetic estrogen mestranol. Rats treated biweekly for 12 weeks with mestranol (50 micrograms/100 g b.wt.) had a significant reduction in the apparent number of alpha-2-adrenoceptors in the frontal cortex and nucleus tractus solitarius (NTS), while apparent numbers of both alpha-1 and alpha-2-adrenoceptors were depressed in the locus coeruleus.

Reference: Brain Res Bull. 1988 Aug;21(2):329-33. https://pubmed.ncbi.nlm.nih.gov/2847856/

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.