

# Product data sheet



MedKoo Cat#: 571042 Name: Roxarsone CAS#: 121-19-7 Chemical Formula: C <sub>6</sub> H <sub>6</sub> AsNO <sub>6</sub> Exact Mass: 262.9411 Molecular Weight: 263.04	
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:

Roxarsone is an organoarsenic feed additive and has been widely used in the poultry industry to prevent coccidiosis and improve feed efficiency. However, it has potential to lead to the accumulation of arsenic in the environment and food products, such as poultry meat and rice.

## 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
To be determined	To be determined	To be determined

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.80 mL	19.01 mL	38.02 mL
5 mM	0.76 mL	3.80 mL	7.60 mL
10 mM	0.38 mL	1.90 mL	3.80 mL
50 mM	0.08 mL	0.38 mL	0.76 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

- Kang Z, Zhou Q, Wang K, Wang A, Chen T, Wei H, Wang T. Roxarsone Delivery Nanocomposite Based on Nitrite-Functionalized Mesoporous Polydopamine for Multidrug-Resistant Bacterial Infections via Enhanced Chemo-Photothermal Therapy. *Chempluschem*. 2023 Apr;88(4):e202300061. doi: 10.1002/cplu.202300061. PMID: 36947010.
- Chen G, Xu R, Liu L, Shi H, Wang G, Wang G. Limited carbon source retards inorganic arsenic release during roxarsone degradation in *Shewanella oneidensis* microbial fuel cells. *Appl Microbiol Biotechnol*. 2018 Sep;102(18):8093-8106. doi: 10.1007/s00253-018-9212-1. Epub 2018 Jul 9. PMID: 29987384.

### In vivo study

- Chen S, Xu J, Wei Q, Zhao Z, Chen X, Cui H, Zhang Y. VEGF/Flk1 Mechanism is Involved in Roxarsone Promotion of Rat Endothelial Cell Growth and B16F10 Xenograft Tumor Angiogenesis. *Sci Rep*. 2019 Nov 22;9(1):17417. doi: 10.1038/s41598-019-53870-3. PMID: 31758020; PMCID: PMC6874592.
- Zhang Y, Wang Y, Lu Q, Xin W, Cui W, Zhu J. Organoarsenic Roxarsone Promotes Angiogenesis In Vivo. *Basic Clin Pharmacol Toxicol*. 2016 Apr;118(4):259-70. doi: 10.1111/bcpt.12501. Epub 2015 Nov 13. PMID: 26450128.

## 7. Bioactivity

Biological target:

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The presence of roxarsone and its degradation products results in the instability of the anaerobic methanogenic process. Roxarsone inhibits methane production, and rapidly degrades into 3-amino-4-hydroxyphenylarsonic acid (HAPA).

## In vitro activity

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A bactericidal nanocomposite constructed by loading Roxarsone onto nitrosylated mesoporous polydopamine (named mPDA@NO-ROX) could be a promising candidate for anti-infection therapy of multidrug-resistant bacteria. Cytotoxicity experiments indicated that mPDA@NO-ROX exhibited only 5 % of hemolysis rate and high cell viability at 1 mg mL<sup>-1</sup> against mammalian fibroblasts, suggesting the excellent biocompatibility.

Reference: Chempluschem. 2023 Apr;88(4):e202300061. <https://pubmed.ncbi.nlm.nih.gov/36947010/>

## In vivo activity

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Roxarsone promotes angiogenesis in vivo. Roxarsone significantly increased the volume, weight and haemoglobin content of rat endothelial cell Matrigel plugs. Roxarsone significantly increased the numbers of primary/secondary vessels and area of vessels in the chicken chorioallantoic membrane assay and increased tumour weight and volume in the MCF-7 cell xenograft tumour model.

Reference: Basic Clin Pharmacol Toxicol. 2016 Apr;118(4):259-70. <https://pubmed.ncbi.nlm.nih.gov/26450128/>

*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.*