

Product data sheet



MedKoo Cat#: 318664 Name: Riluzole CAS#: 1744-22-5 Chemical Formula: C ₈ H ₅ F ₃ N ₂ OS Exact Mass: 234.0075 Molecular Weight: 234.20	
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:

Riluzole is a drug used to treat amyotrophic lateral sclerosis. It delays the onset of ventilator-dependence or tracheostomy in selected patients and may increase survival by approximately two to three months.

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	47	200.68
Ethanol	47	200.68

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.27 mL	21.35 mL	42.70 mL
5 mM	0.85 mL	4.27 mL	8.54 mL
10 mM	0.43 mL	2.13 mL	4.27 mL
50 mM	0.09 mL	0.43 mL	0.85 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

- Rizaner N, Uzun S, Fraser SP, Djamgoz MBA, Altun S. Riluzole: Anti-invasive effects on rat prostate cancer cells under normoxic and hypoxic conditions. *Basic Clin Pharmacol Toxicol*. 2020 Oct;127(4):254-264. doi: 10.1111/bcpt.13417. Epub 2020 Jun 19. PMID: 32304618.
- Wu XL, Liu L, Wang QC, Wang HF, Zhao XR, Lin XB, Lv WJ, Niu YB, Lu TL, Mei QB. Antitumor Activity and Mechanism Study of Riluzole and Its Derivatives. *Iran J Pharm Res*. 2020 Summer;19(3):217-230. doi: 10.22037/ijpr.2020.1101149. PMID: 33680024; PMCID: PMC7757987.

In vivo study

- Squitieri F, Orobello S, Cannella M, Martino T, Romanelli P, Giovacchini G, Frati L, Mansi L, Ciarmiello A. Riluzole protects Huntington disease patients from brain glucose hypometabolism and grey matter volume loss and increases production of neurotrophins. *Eur J Nucl Med Mol Imaging*. 2009 Jul;36(7):1113-20. doi: 10.1007/s00259-009-1103-3. Epub 2009 Mar 11. PMID: 19280185.
- Thakore NJ, Lapin BR, Mitsumoto H, Pooled Resource Open-Access Als Clinical Trials Consortium. Early initiation of riluzole may improve absolute survival in amyotrophic lateral sclerosis. *Muscle Nerve*. 2022 Dec;66(6):702-708. doi: 10.1002/mus.27724. Epub 2022 Oct 4. PMID: 36117390; PMCID: PMC9828202.

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7. Bioactivity

Biological target:

Riluzole is a cell-permeable benzothiazole compound that functions as a polyglutamine aggregation inhibitor and stimulates the synthesis of NGF, BDNF, and GDNF in mouse astrocyte cultures. It is reported to offer neuroprotection, slow down disease progression in amyotrophic lateral sclerosis patients, and prolong the lifespan of animal models of Huntington's disease.

In vitro activity

This study showed that riluzole has anti-invasive effects on rat Mat-LyLu rat prostate cancer cells. Riluzole under hypoxia can modulate Nav1.7 mRNA and protein expression. Riluzole may ultimately be "repurposed" as an anti-metastatic drug against PCa.

Reference: Basic Clin Pharmacol Toxicol. 2020 Oct;127(4):254-264. <https://pubmed.ncbi.nlm.nih.gov/32304618/>

In vivo activity

Riluzole-treated Huntington's Disease patients displayed significantly less grey matter volume loss and increased metabolic (18)F-fluoro-2-deoxy-D-glucose (FDG) compared to placebo. There was a linear correlation between decreased metabolic FDG uptake and worsening clinical scores, suggesting that Riluzole could be utilized in Huntington's disease treatment.

Reference: Eur J Nucl Med Mol Imaging. 2009 Jul;36(7):1113-20. <https://pubmed.ncbi.nlm.nih.gov/19280185/>

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.