# Small Molecules

**Erastin**

Cystine transporter inhibitor; Induces ferroptosis

Catalog #100-0544 1 mg
100-0545 5 mg

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## Product Description

Erastin is a cystine transporter inhibitor that induces ferroptotic cell death in vitro (Li et al.). By blocking system Xc-, it induces iron-dependent programmed cell death that plays an important regulatory role in cancer, neurological disease, and acute kidney injury (Li et al.). It is shown to have increased activity in the presence of oncoproteins (Dolma et al.).

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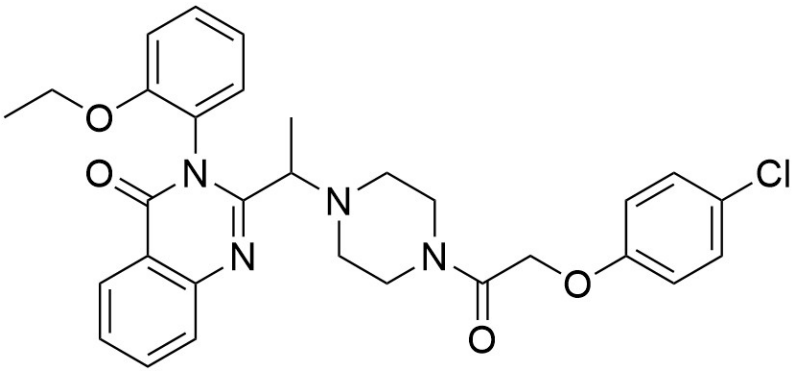
| Molecular Name: | Erastin |
| Alternative Names: | Not applicable |
| CAS Number: | 571203-78-6 |
| Chemical Formula: | $C_{30}H_{31}ClN_4O_4$ |
| Molecular Weight: | 547.1 g/mol |
| Purity: | ≥ 98% |
| Chemical Name: | 2-[1-[4-[2-(4-chlorophenoxy)acetyl]-1-piperazinyl]ethyl]-3-(2-ethoxyphenyl)-4(3H)-quinazolinone |
| Structure: | |




## Properties

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| Physical Appearance: | A crystalline solid |
| Storage: | Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt. |
| Solubility: | • DMSO ≤ 1.8 mM<br>• DMF ≤ 18 mM<br>For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 183 µL of DMSO.<br><br>Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.<br><br>Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity. |

## Published Applications

CANCER RESEARCH
· Induces cell death in cells expressing Ras and SV40 small T oncoprotein ($IC_{50}$ =1.25 - 5 µg/mL; Dolma et al).
· Inhibits cystine uptake through the cystine-glutamate antiporter (system Xc-) as measured by glutamate release assay ($IC_{50}$ = 0.20 µM; Larraufie et al.).

## References

Dolma S et al. (2003) Identification of genotype-selective antitumor agents using synthetic lethal chemical screening in engineered human tumor cells. Cancer Cell 3(3): 285–96.
Larraufie M-H et al. (2015) Incorporation of metabolically stable ketones into a small molecule probe to increase potency and water solubility. Bioorg Med Chem Lett 25(21): 4787–92.
Li J et al. (2020) Ferroptosis: past, present and future. Cell Death Dis 11(2): 88.

## Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).