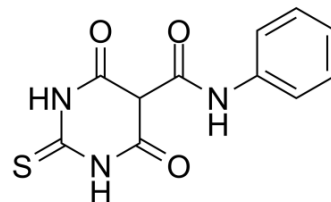


## Merbarone

<b>Cat. No.:</b>	HY-19024		
<b>CAS No.:</b>	97534-21-9		
<b>Molecular Formula:</b>	C <sub>11</sub> H <sub>9</sub> N <sub>3</sub> O <sub>3</sub> S		
<b>Molecular Weight:</b>	263.27		
<b>Target:</b>	Topoisomerase		
<b>Pathway:</b>	Cell Cycle/DNA Damage		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### BIOLOGICAL ACTIVITY

<b>Description</b>	Merbarone (NSC 336628) is an orally active inhibitor of topoisomerase II. Merbarone acts primarily by blocking topoisomerase II-mediated DNA cleavage. Merbarone is an anticancer agent <sup>[1][2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	topoisomerase II <sup>[1]</sup>
<b>In Vitro</b>	<p>Merbarone (1-100 μM) inhibits L1210 cells proliferation in a concentration-dependent manner, with an IC<sub>50</sub> of 10 μM<sup>[3]</sup>.</p> <p>Merbarone (10-200 μM; 10 min) inhibits DNA relaxation catalyzed by human topoisomerase IIα, with an IC<sub>50</sub> of 40 μM<sup>[1]</sup>.</p> <p>Merbarone (25-200 μM; 6 min) blocks topoisomerase II-mediated DNA cleavage, with an IC<sub>50</sub> of 50 μM<sup>[1]</sup>.</p> <p>Merbarone (100 μM; 6 min) inhibits topoisomerase II-mediated DNA cleavage in a global manner<sup>[1]</sup>.</p> <p>Merbarone (100 μM; 6 min) does not impair topoisomerase II•DNA binding<sup>[1]</sup>.</p> <p>Merbarone (200 μM; 4-16 min) does not inhibit topoisomerase II-catalyzed ATP hydrolysis<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
<b>In Vivo</b>	<p>Merbarone (50 mg/kg; daily i.p. for 5 d) achieves a maximum increased life span (ILS) of 101% in P388 murine leukemia<sup>[2]</sup>.</p> <p>Merbarone (124 mg/kg; daily p.o. for 9 d) has anti-tumor activity in mice<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

### REFERENCES

- [1]. Fortune JM, et, al. Merbarone inhibits the catalytic activity of human topoisomerase IIalpha by blocking DNA cleavage. *J Biol Chem.* 1998 Jul 10;273(28):17643-50.
- [2]. Brewer AD, et, al. 5-(N-phenylcarboxamido)-2-thiobarbituric acid (NSC 336628), a novel potential antitumor agent. *Biochem Pharmacol.* 1985 Jun 1;34(11):2047-50.
- [3]. Cooney DA, et, al. Initial mechanistic studies with merbarone (NSC 336628). *Biochem Pharmacol.* 1985 Sep 15;34(18):3395-8.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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