

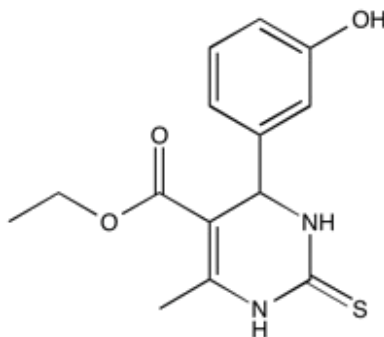
Catalog # 10-2629

Monastrol

CAS# 254753-54-3

1,2,3,4-tetrahydro-4-(3-hydroxyphenyl)-6-methyl-2-thioxo-5-pyrimidinecarboxylic acid, ethyl ester

Lot # X101126



Potent, cell-permeable, small molecule inhibitor of mitosis. Monastrol-arrested cells are characterized by monopolar spindles.¹ Does not affect other motor proteins or tubulin. Specifically inhibits the mitotic molecular motor kinesin Eg5, a motor protein required for spindle formation (IC₅₀ = 14 μM).² Mimics the effect of amyloid β on long term potentiation in a cellular model of learning and memory.³ Enhances regeneration of adult axons.⁴

- 1) Mayer *et al.* (1999), *Small molecule inhibitor of mitotic spindle bipolarity identified in a phenotype-based screen*; *Science*, **286** 971
- 2) Kapoor *et al.* (2000), *Probing spindle assembly mechanisms with monastrol, a small molecule inhibitor of mitotic kinesin, Eg5*; *J. Cell Biol.*, **150** 975
- 3) Ari *et al.* (2014), *Alzheimer Aβ inhibition of Eg5/kinesin 5 reduces neurotrophin/transmitter receptor function*; *Neurobiol. Aging*, **35** 1839
- 4) Lin *et al.* (2011), *Inhibition of Kinesin-5, a microtubule-based motor protein, as a strategy for enhancing regeneration of adult axons*; *Traffic*, **12** 269

PHYSICAL DATA

Molecular Weight:	292.35
Molecular Formula:	C ₁₄ H ₁₆ N ₂ O ₃ S
Purity:	98% by TLC
	NMR: (Conforms)
Solubility:	DMSO (up to 25 mg/ml) or Ethanol (up to 25 mg/ml)
Physical Description:	Beige solid
Storage and Stability:	Store as supplied, desiccated at -20°C for up to 1 year from the date of purchase. Solutions in DMSO or ethanol may be stored at -20°C for up to 1 month.

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