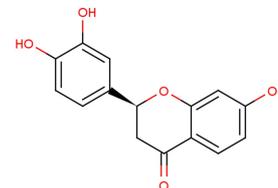


## (-)-Butin

**Chemical Properties**

CAS No.:	492-14-8
Formula:	C <sub>15</sub> H <sub>12</sub> O <sub>5</sub>
Molecular Weight:	272.25
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

**Biological Description**

Description	(-)-Butin has antioxidant activity, can protect cells against H <sub>2</sub> O <sub>2</sub> -induced apoptosis, oxidative DNA damage and oxidative mitochondrial dysfunction; it attenuates oxidative stress by activating Nrf2-mediated Mn SOD induction via the PI3K/Akt signaling pathway.
Targets(IC <sub>50</sub> )	PI3K: None Akt: None Nrf2: None
In vitro	The antioxidant function of manganese superoxide dismutase (Mn SOD) is important in preventing oxidative stress. While exposure to H <sub>2</sub> O <sub>2</sub> reduced the expression of Mn SOD in Chinese hamster lung fibroblast (V79-4), the addition of Butin restored Mn SOD expression at both the mRNA and protein levels, resulting in increased Mn SOD activity. The transcription factor NF-E2-related factor 2 (Nrf2) regulates Mn SOD gene expression by binding to the antioxidant responsive element (ARE). Butin enhanced the nuclear translocation and ARE-binding activity of Nrf2, which was decreased by H <sub>2</sub> O <sub>2</sub> . The siRNA-mediated knockdown of Nrf2 attenuated Butin-induced Mn SOD expression and activity. Further, phosphatidylinositol 3-kinase (PI3K)/protein kinase B (PKB, Akt) contributed to the ARE-driven Mn SOD expression. Butin activated PI3K/Akt and exposure to either LY294002 (a PI3K inhibitor), Akt inhibitor IV (an Akt-specific inhibitor), or Akt siRNA suppressed the Butin-induced activation of Nrf2, resulting in decreased Mn SOD expression and activity. Finally, the cytoprotective effect of Butin against H <sub>2</sub> O <sub>2</sub> -induced cell damage was suppressed by the siRNA-mediated knockdown of Mn SOD[1]

**Solubility Information**

Solubility	< 1 mg/ml refers to the product slightly soluble or insoluble
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## Preparing Stock Solutions

	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	3.673 mL	18.365 mL	36.731 mL
5 mM	0.735 mL	3.673 mL	7.346 mL
10 mM	0.367 mL	1.837 mL	3.673 mL
50 mM	0.073 mL	0.367 mL	0.735 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

## Reference

1. The cytoprotective effect of butin against oxidative stress is mediated by the up-regulation of manganese superoxide dismutase expression through a PI3K/Akt/Nrf2-dependent pathway. *J Cell Biochem.* 2012 Jun;113(6):1987-97.

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Tel:781-999-4286

E-mail:[info@targetmol.com](mailto:info@targetmol.com)

Address:36 Washington Street,Wellesley Hills,MA 02481