

Lactate oxidase

Chemical Properties

CAS No. : 9028-72-2

Formula:

Molecular Weight:

Storage: Store at low temperature,Keep away from direct sunlight,Keep away from moisture

Store at -20°C

Actual storage temperature shall be subject to the COA.

Biological Description

Description	Lactate oxidase is an FMN-dependent enzyme that specifically catalyzes l-lactate, destroys lactate-activated RAS and PI3K oncogenic signaling, and can be used in the diagnosis and treatment of cancer.
Targets(IC50)	Others,Endogenous Metabolite
In vitro	The effect of Lactate oxidase expression on the release of lactate was assessed in HEK293 cells and primary astrocytes. Lactate concentration in the conditioned extracellular media was significantly decreased by Lactate oxidase (33.2% in HEK293 cells and 15.4% in astrocytes), reflecting limited constitutive lactate release. Expression of Lactate oxidase by astrocytes in organotypic slices significantly decreased lactate tone compared to control slices. [1]
In vivo	Analysis of the expression of tdTomato indicated that LVV-sGFAP-Lactate oxidase-IRES-tdTomato transduced astrocytes within a limited area of the dorsal hippocampus. Compared to control mice, mice expressing Lactate oxidase in astrocytes exhibited a significantly increased locomotor activity in the hole board test without altering the number of head dips, suggesting elevated novelty-induced activity. In addition, mice expressing Lactate oxidase showed substantially less freezing behavior during the habituation session in the trace fear conditioning test, indicative of elevated reactivity to unfamiliar environments. Collectively, our findings suggest that expression of Lactate oxidase in hippocampal astrocytes led to increased responsiveness to novelty in mice that could facilitate some types of recognition memory. [1]

Solubility Information

Solubility	H2O: 8 mg/mL,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Reference

Vaccari Cardoso B, et al. Reducing l-lactate release from hippocampal astrocytes by intracellular oxidation increases novelty induced activity in mice. *Glia*. 2021 May;69(5):1241-1250.

Mi S, et al. An integrated microchannel biosensor platform to analyse low density lactate metabolism in HepG2 cells in vitro. *RSC Adv*. 2019 Mar 19;9(16):9006-9013.

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