

## Certificate of Analysis

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**Product Name:** (R)-2-Hydroxyglutaric acid disodium salt

**Catalog No.:** 6124

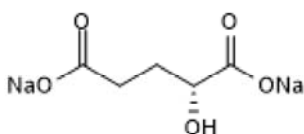
**Batch No.:** 3

CAS Number: 103404-90-6

IUPAC Name: (R)-2-Hydroxypentanedioic acid disodium salt

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>5</sub>H<sub>6</sub>Na<sub>2</sub>O<sub>5</sub>  
**Batch Molecular Weight:** 192.08  
**Physical Appearance:** Off-white solid  
**Solubility:** water to 100 mM  
**Storage:** Store at -20°C  
**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure  
**Optical Rotation:** [α]<sub>D</sub> = +9.7 (Concentration = 1, Solvent = Water)  
**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	31.27	3.15	
Found	31	3.11	

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Oncometabolite produced by mutant isocitrate dehydrogenase 1 (IDH1) and IDH2. Inhibits KDM4A in murine embryonic fibroblasts resulting in activation of mTOR. Also activates NF-κB in bone marrow stromal cells and inhibits FTO (mRNA N<sup>6</sup>-methyladenine demethylase).

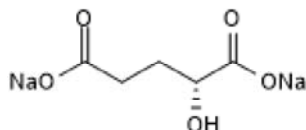
**Physical and Chemical Properties:**

Batch Molecular Formula: C<sub>5</sub>H<sub>6</sub>Na<sub>2</sub>O<sub>5</sub>

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Physical Appearance: Off-white solid

**Batch Molecular Structure:**



**Storage:** Store at -20°C

**Solubility & Usage Info:**

water to 100 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Mauer et al** (2019) FTO controls reversible m<sup>6</sup>Am RNA methylation during snRNA biogenesis. *Nat.Chem.Biol.* **15** 340. PMID: 30778204.

**Carbonneau et al** (2016) The oncometabolite 2-hydroxyglutarate activates the mTOR signalling pathway. *Nat.Commun.* **7** 12700. PMID: 27624942.

**Chen et al** (2016) The oncometabolite R-2-hydroxyglutarate activates NF-κB-dependent tumor-promoting stromal niche for acute myeloid leukemia cells. *Sci.Rep.* **6** 32428. PMID: 27577048.

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