

Certificate of Analysis

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

Catalog No.: 6124

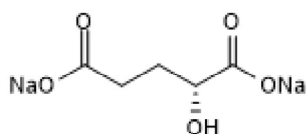
Batch No.: 6

CAS Number: 103404-90-6

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

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₅H₆Na₂O₅
Batch Molecular Weight: 192.08
Physical Appearance: White solid
Solubility: water to 100 mM
Storage: Store at -20°C
Batch Molecular Structure:



2. ANALYTICAL DATA

¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Optical Rotation: [α]_D = +7.8 (Concentration = 1, Solvent = Water)
Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	31.27	3.15	0
Found	30.58	3.06	0.05

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

bio-techne.com
info@bio-techne.com
techsupport@bio-techne.com

North America
 Tel: (800) 343 7475

China
info.cn@bio-techne.com
 Tel: +86 (21) 52380373

Europe Middle East Africa
 Tel: +44 (0)1235 529449

Rest of World
www.tocris.com/distributors
 Tel: +1 612 379 2956

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Description:

(R)-2-Hydroxyglutaric acid disodium salt is an 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 N⁶-methyladenine demethylase).

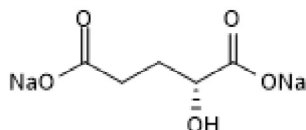
Physical and Chemical Properties:

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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. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

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 m⁶Am 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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