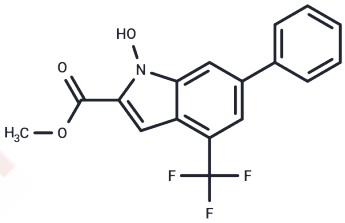
# Data Sheet (Cat.No.T24530)

TargetMol

NHI-2

## Chemical Properties



| | |
|---|---|
| CAS No. : | 1269802-97-2 |
| Formula: | C17H12F3NO3 |
| Molecular Weight: | 335.28 |
| Storage: | Store at low temperature<br>Powder: -20°C for 3 years \| In solvent: -80°C for 1 year<br>Actual storage temperature shall be subject to the COA. |

## Biological Description

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|---|---|
| Description | NHI-2 is a lactate dehydrogenase A (LDHA) inhibitor with an IC50 value of 14.7 μM, demonstrating high selectivity for LDHA over LDHB, for which the IC50 is 55.8 μM. NHI-2 functions as an efficient anti-glycolytic agent, enhancing apoptosis, inducing cell cycle arrest at the S and G2 phases, and exerting broad-spectrum antiproliferative effects in cancer cells. NHI-2 additionally affects extracellular acidification rates and ATP production and has demonstrated tumor growth suppression in murine B78 melanoma models, highlighting its role in cancer metabolism research. |
| Targets(IC50) | Apoptosis,Dehydrogenase |
| In vitro | **Methods**: B78 cells were treated with NHI-2 (12-40 μM, 72 h), and cell proliferation was monitored in real-time using the IncuCyte™ S3 live-cell imaging system.<br>**Results**: NHI-2 completely inhibited cell proliferation at 40 μM, with an EC50 value of 25 μM. [6] |
| In vivo | **Methods**: NHI-2 (1 mg/kg, once daily for 15 consecutive days) was administered via intratumoral injection to B78 melanoma mouse models to evaluate the efficacy of lactic acid dehydrogenase inhibitors (LDHIs) in combination with immune checkpoint inhibitors (ICIs) and radiotherapy (RT).<br>**Results**: The combined use of LDHIs, ICIs, and RT significantly reduced tumor volume and increased the CD8:Treg cell ratio, indicating enhanced anti-tumor immune response. [6] |

## Solubility Information

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|---|---|
| Solubility | DMSO: 20 mg/mL (59.65 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 2.9826 mL | 14.9129 mL | 29.8258 mL |
| 5 mM | 0.5965 mL | 2.9826 mL | 5.9652 mL |
| 10 mM | 0.2983 mL | 1.4913 mL | 2.9826 mL |
| 50 mM | 0.0597 mL | 0.2983 mL | 0.5965 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Czyż DM, et al. Brucella abortus Induces a Warburg Shift in Host Metabolism That Is Linked to Enhanced Intracellular Survival of the Pathogen. J Bacteriol. 2017 Jul 11;199(15). pii: e00227-17.
Fava A, et al. Cognitive impairment is correlated with insulin resistance degree: the "PA-NICO-study". Metab Brain Dis. 2017 Jun;32(3):799-810.
Lea MA, Guzman Y, Desbordes C. Inhibition of Growth by Combined Treatment with Inhibitors of Lactate Dehydrogenase and either Phenformin or Inhibitors of 6-Phosphofructo-2-kinase/Fructose-2,6-bisphosphatase 3. Anticancer Res. 2016 Apr;36(4):1479-88.
Daniele S, et al. Lactate dehydrogenase-A inhibition induces human glioblastoma multiforme stem cell differentiation and death. Sci Rep. 2015 Oct 23;5:15556.
Granchi C, et al. Assessing the differential action on cancer cells of LDH-A inhibitors based on the N-hydroxyindole-2-carboxylate (NHI) and malonic (Mal) scaffolds. Org Biomol Chem. 2013;11(38):6588-6596.
Gurel Z, et al. Metabolic modulation of melanoma enhances the therapeutic potential of immune checkpoint inhibitors. Front Oncol. 2024 Oct 1;14:1428802.