

Certificate of Analysis

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Product Name: DFHBI

Catalog No.: 5609

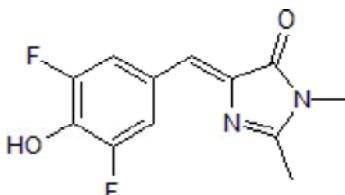
Batch No.: 1

CAS Number: 1241390-29-3

IUPAC Name: (5Z)-5-[(3,5-Difluoro-4-hydroxyphenyl)methylene]-3,5-dihydro-2,3-dimethyl-4H-imidazol-4-one

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₁₂ H ₁₀ F ₂ N ₂ O ₂
Batch Molecular Weight:	252.22
Physical Appearance:	Yellow solid
Solubility:	DMSO to 100 mM ethanol to 5 mM with gentle warming
Storage:	Store at -20°C
Batch Molecular Structure:	



2. ANALYTICAL DATA

TLC:	R _f = 0.47 (Chloroform:Methanol [9:1])
HPLC:	Shows >99.9% purity
¹H NMR:	Consistent with structure
Mass Spectrum:	Consistent with structure
Microanalysis:	
	Carbon Hydrogen Nitrogen
	Theoretical 57.14 4 11.11
	Found 57.38 3.91 11.08

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

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Description:

DFHBI is a mimic of green fluorescent protein (GFP) fluorophore for imaging RNA in living cells. DFHBI fluorescence is activated by binding to Spinach2 or Broccoli aptamers. Exhibits peak excitation maxima of 447 nm and peak fluorescence emission of 501 nm when bound to Spinach2.

Physical and Chemical Properties:

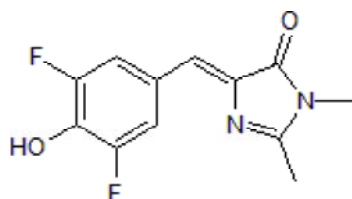
Batch Molecular Formula: C₁₂H₁₀F₂N₂O₂

Batch Molecular Weight: 252.22

Physical Appearance: Yellow solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at -20°C

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

DMSO to 100 mM

ethanol to 5 mM with gentle warming

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:

Truong *et al* (2022) The fluorescent aptamer Squash extensively repurposes the adenine riboswitch fold. *Nat.Chem.Biol.* **18** 191. PMID: 34937911.

Svensen and Jaffrey (2016) Fluorescent RNA Aptamers as a Tool to Study RNA-Modifying Enzymes. *Cell Chem.Biol.* **23** 415. PMID: 26877022.

Filonov *et al* (2015) In-gel imaging of RNA processing using broccoli reveals optimal aptamer expression strategies. *Chem.Biol.* **22** 649. PMID: 26000751.

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