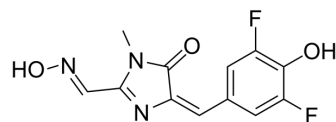


## DFHO

Cat. No.:	HY-136277
CAS No.:	1420815-34-4
Molecular Formula:	C <sub>12</sub> H <sub>9</sub> F <sub>2</sub> N <sub>3</sub> O <sub>3</sub>
Molecular Weight:	281.21
Target:	Fluorescent Dye
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



## SOLVENT & SOLUBILITY

### In Vitro

DMSO : 100 mg/mL (355.61 mM; Need ultrasonic)

Concentration	Mass			
	1 mg	5 mg	10 mg	
1 mM	3.5561 mL	17.7803 mL	35.5606 mL	
5 mM	0.7112 mL	3.5561 mL	7.1121 mL	
10 mM	0.3556 mL	1.7780 mL	3.5561 mL	

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

### Description

DFHO is a fluorogenic ligand of Corn fluorogenic aptamer. The RNA aptamer, Corn binds DFHO with a K<sub>d</sub> value of 70 nM and converts it to a fluorescent form, enabling RNA imaging in cells<sup>[1][2]</sup>.

### IC<sub>50</sub> & Target

K<sub>d</sub>: 70 nM (Corn binds DFHO)<sup>[1]</sup>

### In Vitro

Corn is tested in E. coli. Minimal fluorescence that is seen in DFHO-treated cells (20 μM) transformed with the empty vector. However robust yellow fluorescence is seen in E. coli expressing Corn<sup>[1]</sup>.

Corn-DFHO exhibits markedly enhanced photostability in vitro. The Corn-DFHO complexes are imaged in mammalian cells. Since the U6 promoter is one of the three major Pol III promoters, Corn from the U6 promoter is expressed and replaced the majority of the U6 sequence with Corn, leaving a minimal 5' capping element leader sequence. The majority of the cells expressed diffuse yellow fluorescence, most prominently in the cytoplasm<sup>[1]</sup>.

DFHO exhibits low background fluorescence and cytotoxicity, making it a potentially suitable fluorophore for activation by RNA aptamers and for imaging experiments in living cells<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## REFERENCES

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- [1]. Wenjiao Song, et al. Imaging RNA polymerase III transcription using a photostable RNA-fluorophore complex. Nat Chem Biol. 2017 Nov;13(11):1187-1194.
- [2]. Hyaeyeong Kim, et al. A Fluorogenic RNA-Based Sensor Activated by Metabolite-Induced RNA Dimerization. Cell Chem Biol. 2019 Dec 19;26(12):1725-1731.e6.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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