

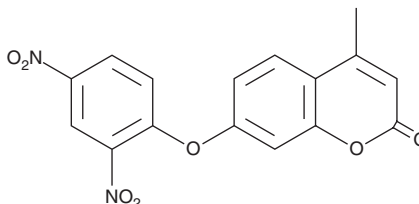
PRODUCT INFORMATION



7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one

Item No. 28472

CAS Registry No.: 314742-00-2
Formal Name: 7-(2,4-dinitrophenoxy)-4-methyl-2H-1-benzopyran-2-one
MF: C₁₆H₁₀N₂O₇
FW: 342.3
Purity: ≥98%
UV/Vis.: λ_{max}: 286, 314 nm
Ex./Em. Max: 323/445 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one is supplied as a crystalline solid. A stock solution may be made by dissolving the 7-(2,4-dinitrophenoxy)-4-methyl-2H-chromen-2-one in the solvent of choice, which should be purged with an inert gas. 7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one is soluble in organic solvents such as DMSO, chloroform, and dimethyl formamide (DMF). The solubility of 7-(2,4-dinitrophenoxy)-4-methyl-2H-chromen-2-one in DMSO is approximately 5 mg/ml and approximately 30 mg/ml in chloroform and DMF.

7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 7-(2,4-dinitrophenoxy)-4-methyl-2H-chromen-2-one should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one is a turn-on fluorescent probe for the detection of hydrogen sulfide (H₂S).¹ 7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one undergoes thiolysis by hydrogen sulfide (HS⁻). It displays excitation/emission maxima of 323/445 nm, respectively, in DMSO and its fluorescence intensity increases in the presence of sulfur-containing molecules.¹⁻³ 7-(2,4-Dinitrophenoxy)-4-methyl-2H-chromen-2-one is selective for sulfur-containing molecules, including cysteine, glutathione (GSH), homocysteine, and selenocysteine and is not cytotoxic up to a concentration of 150 µg/ml.^{1,2}

References

1. Chen, Y., Shang, X.-m., Li, C., *et al.* The synthesis, crystal, hydrogen sulfide detection and cell assement of novel chemsensors based on coumarin derivatives. *Sci. Rep.* **8**(1), 16159 (2018).
2. Zhang, B., Ge, C., Yao, J., *et al.* Selective selenol fluorescent probes: Design, synthesis, structural determinants, and biological applications. *J. Am. Chem. Soc.* **137**(2), 757-769 (2015).
3. Yang, X.F., Su, Z., Liu, C., *et al.* A thiol-selective fluorogenic probe based on the cleavage of 4-methylumbelliferyl-2',4',6'-trinitrophenyl ether. *Anal. Bioanal. Chem.* **396**(7), 2667-2674 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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