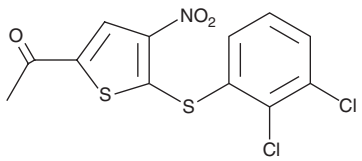
PRODUCT INFORMATION

P005091

Item No. 15224

CAS Registry No.:	882257-11-6
Formal Name:	1-[5-[(2,3-dichlorophenyl)thio]-4-nitro-2-thienyl]-ethanone
Synonym:	P5091
MF:	$C_{12}H_7Cl_2NO_3S_2$
FW:	348.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 268, 318 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

P005091 is supplied as a crystalline solid. A stock solution may be made by dissolving the P005091 in the solvent of choice, which should be purged with an inert gas. P005091 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of P005091 in these solvents is approximately 0.2 and 3 mg/ml, respectively.

P005091 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, P005091 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. P005091 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

Ubiquitin-specific proteases (USP/UBP) remove ubiquitin from proteins, sparing them from degradation by the proteasome. USP7 is a cysteine protease associated with prostate cancer that selectively deubiquitylates HDM2, the ubiquitin E3 ligase for the tumor suppressor p53. P005091 is a trisubstituted thiophene that inhibits USP7 and the closely related USP47 (EC_{50}s = 4.2 and 4.3 µM, respectively) with little activity against other classes of proteases, including caspases, cathepsins, calpain, metalloproteases, and serine proteases (EC_{50}s = >100 µM).[1,2] P005091 has been shown to accelerate the degradation of the USP7 substrate HDM2 in several multiple myeloma cell lines (EC_{50} = 11 µM) and to inhibit the growth of HCT116 human colorectal cancer cells (EC_{50} = 11 µM) synergistically with doxorubicin, etoposide, or mechlorethamine.[1] *In vivo*, 10 mg/kg P005091 prolongs survival and reduces tumor growth in mice bearing human multiple myeloma and B cell leukemia xenografts.[1]

References

1. Chauhan, D., Tian, Z., Nicholson, B., *et al.* A small molecule inhibitor of ubiquitin-specific protease-7 induces apoptosis in multiple myeloma cells and overcomes bortezomib resistance. *Cancer Cell* **22(3)**, 345-358 (2012).
2. Weinstock, J., Wu, J., Cao, P., *et al.* Selective dual inhibitors of the cancer-related deubiquitylating proteases USP7 and USP47. *ACS Med. Chem. Lett.* **3**, 789-792 (2012).

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