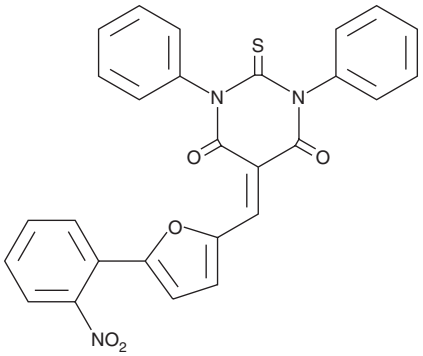
PRODUCT INFORMATION

UCF 101

Item No. 15550



CAS Registry No.:	313649-08-0
Formal Name:	dihydro-5-[[5-(2-nitrophenyl)-2-furanyl] methylene]-1,3-diphenyl-2-thioxo-4,6(1H,5H)-pyrimidinedione
MF:	$C_{27}H_{17}N_3O_5S$
FW:	495.5
Purity:	≥98%
UV/Vis.:	λ_{max}: 430 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

UCF 101 is supplied as a crystalline solid. A stock solution may be made by dissolving the UCF 101 in the solvent of choice, which should be purged with an inert gas. UCF 101 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of UCF 101 in these solvents is approximately 5 and 20 mg/ml, respectively.

Description

Mammalian Omi/HtrA2 is a serine protease localized in mitochondria with close homology to bacterial HtrA chaperones. It is released from the mitochondria in response to apoptotic stimuli whereupon it induces cell death through both a caspase-dependent manner and a mechanism that involves its protease activity. UCF 101 is an inhibitor of the proteolytic activity of Omi/HtrA2 (IC_{50} = 9.5 µM).[1] It is highly specific for Omi/HtrA2, demonstrating less potent activity when tested against a panel of various other serine proteases (IC_{50}s range from 200 to >500 µM).[1] Additionally, UCF 101 is naturally fluorescent, thus enabling the visualization of its entry into cells.[1] UCF 101 has been used to decrease cerebral infarct size in a rat model of cerebral ischemia, demonstrating neuroprotective effects by reducing apoptosis of cortical cells.[2] It has also been reported to be protective of cardiomyocytes against ischemic injury through a mechanism that prevents Omi/HtrA2 proteolysis of Thanatos-associated protein 5, a cardiac-specific nuclear protein that controls cell cycle progression.[3]

References

1. Cilenti, L., Lee, Y., Hess, S., *et al.* Characterization of a novel and specific inhibitor for the pro-apoptotic protease Omi/HtrA2. *J. Biol. Chem.* **278(13)**, 11489-11494 (2003).
2. Su, D., Su, Z., Wang, J., *et al.* UCF-101, a novel Omi/HtrA2 inhibitor, protects against cerebral ischemia/reperfusion injury in rats. *Anat. Rec. (Hoboken)* **292(6)**, 854-861 (2009).
3. Balakrishnan, M.P., Cilenti, L., Mashak, Z., *et al.* THAP5 is a human cardiac-specific inhibitor of cell cycle that is cleaved by the proapoptotic Omi/HtrA2 protease during cell death. *Am. J. Physiol. Heart Circ. Physiol.* **297(2)**, H643-H653 (2009).

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