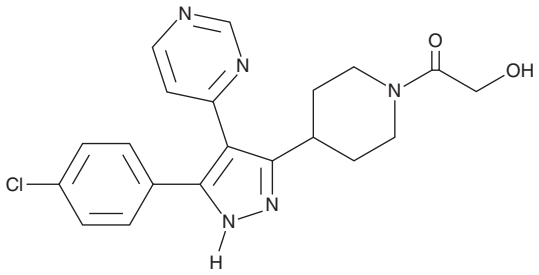
PRODUCT INFORMATION

SD-06

Item No. 30686

CAS Registry No.:	271576-80-8
Formal Name:	1-[4-[5-(4-chlorophenyl)-4-(4-pyrimidinyl)-1H-pyrazol-3-yl]-1-piperidinyl]-2-hydroxy-ethanone
Synonym:	SD-006
MF:	$C_{20}H_{20}ClN_5O_2$
FW:	397.9
Purity:	≥98%
UV/Vis.:	λ_{max}: 240, 282 nm
Supplied as:	A 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

SD-06 is supplied as a solid. A stock solution may be made by dissolving the SD-06 in the solvent of choice, which should be purged with an inert gas. SD-06 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of SD-06 in these solvents is approximately 15 and 10 mg/ml, respectively.

SD-06 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, SD-06 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. SD-06 has a solubility of approximately 0.14 mg/ml in a 1:6 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

SD-06 is an ATP-competitive inhibitor of p38α MAPK (IC_{50} = 0.016 µM).[1] It is selective for p38α over p38β, p38γ, and p38δ MAPKs (IC_{50}s = 0.677, >100, and >100 µM, respectively), as well as a panel of 54 additional kinases (IC_{50}s = >3 µM for all). SD-06 inhibits LPS-induced TNF-α, IL-6, and IL-1β release from primary human monocytes (IC_{50}s = 79.4, 106.9, and 105.9 nM, respectively). It decreases IL-1β-induced production of prostaglandin E_2 (PGE_2; Item No. 14010) in patient-derived rheumatoid arthritis synovial fibroblasts (RASFs; IC_{50} = 96.2 nM). SD-06 (30 mg/kg) reduces carrageenan-induced paw swelling and hyperalgesia in rats. It also reduces the incidence of arthritis in a mouse model of collagen-induced arthritis and protects against joint and bone destruction in a rat model of streptococcal cell wall-induced arthritis.

Reference

1. Burnette, B.L., Selness, S., Devraj, R., *et al.* SD0006: A potent, selective and orally available inhibitor of p38 kinase. *Pharmacology* **84(1)**, 42-60 (2009).

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