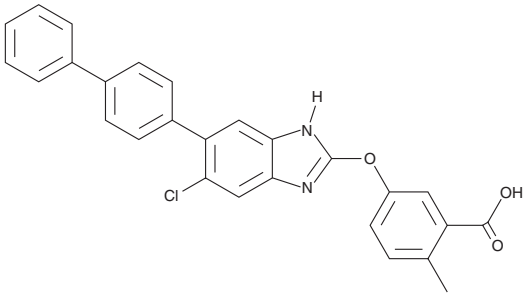
PRODUCT INFORMATION

MK-3903

Item No. 29661

CAS Registry No.:	1219737-12-8
Formal Name:	5-[(5-[1,1′-biphenyl]-4-yl-6-chloro-1H-benzimidazol-2-yl)oxy]-2-methyl-benzoic acid
MF:	$C_{27}H_{19}ClN_2O_3$
FW:	454.9
Purity:	≥98%
UV/Vis.:	λ_{max}: 247, 279 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

MK-3903 is supplied as a solid. A stock solution may be made by dissolving the MK-3903 in the solvent of choice, which should be purged with an inert gas. MK-3903 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of MK-3903 in these solvents is approximately 0.2, 15, and 10 mg/ml, respectively.

MK-3903 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, MK-3903 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. MK-3903 has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

MK-3903 is an activator of AMP-activated protein kinase (AMPK; EC_{50} = 9 nM).[1] It is selective for AMPK over a kinase panel at 10 µM, as well as the cytochrome P450 (CYP) isoforms CYP3A4 and CYP2D6 (IC_{50}s = >50 µM for both) and the pregnane X receptor (PXR; EC_{50} = >30 µM). MK-3903 (30 mg/kg) increases muscle and liver levels of phosphorylated ACC, an AMPK substrate, and reduces insulin resistance in diet-induced obese (DIO) mice. It inhibits hepatic fatty acid synthesis in *db/db* mice when administered at doses ranging from 3 to 30 mg/kg.

Reference

1. Lan, P., Romero, F.A., Wodka, D., *et al.* Hit-to-lead optimization and discovery of 5-((5-([1,1'-biphenyl]-4-yl)-6-chloro-1H-benzo[d]imidazol-2-yl)oxy)-2-methylbenzoic acid (MK-3903): A novel class of benzimidazole-based activators of AMP-activated protein kinase. *J. Med. Chem.* **60(21)**, 9040-9052 (2017).

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