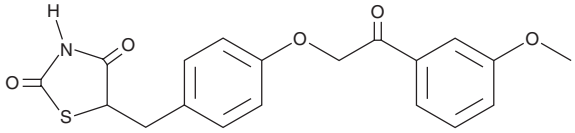
PRODUCT INFORMATION

MSDC-0602

Item No. 27829

CAS Registry No.:	1133819-87-0
Formal Name:	5-[[4-[2-(3-methoxyphenyl)-2-oxoethoxy]phenyl]methyl]-2,4-thiazolidinedione
MF:	$C_{19}H_{17}NO_5S$
FW:	371.4
Purity:	≥95%
UV/Vis.:	λ_{max}: 221, 250, 288, 311 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

MSDC-0602 is supplied as a solid. A stock solution may be made by dissolving the MSDC-0602 in the solvent of choice, which should be purged with an inert gas. MSDC-0602 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of MSDC-0602 in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

MSDC-0602 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, MSDC-0602 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. MSDC-0602 has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

MSDC-0602 is a PPARγ-sparing thiazolidinedione derivative.[1] It binds only weakly to PPARγ (IC_{50} = 18.25 µM) and induces minimal activation of a Gal4-PPARγ reporter construct when used at a concentration of 50 µM. MSDC-0602 binds to mitochondrial membranes and decreases the pyruvate-induced oxygen consumption rate in control mitochondria but not in liver-specific mitochondrial pyruvate carrier 2 knockout (LS-*Mpc2*$^{-/-}$) mitochondria.[2] It reduces body weight gain and adiposity, as well as increases intrascapular brown adipose tissue (BAT) mass in a mouse model of non-alcoholic steatohepatitis (NASH) induced by a high-*trans*-fat, -fructose, and -cholesterol diet when administered in the diet for 12 weeks, starting four weeks after the beginning of the diet.[3] It also reverses hepatic fibrosis and stellate cell fibrinogenesis when administered for three weeks, starting 16 weeks after the beginning of the diet. MSDC-0602 decreases plasma glucose, triglyceride, and cholesterol levels in *ob/ob* mice and increases insulin sensitivity in the striatal muscle, adipose tissue, and liver of diet-induced obese mice.[1]

References

1. Chen, Z., Vigueira, P.A., Chambers, K.T., *et al.* Insulin resistance and metabolic derangements in obese mice are ameliorated by a novel peroxisome proliferator-activated receptor γ-sparing thiazolidinedione. *J. Biol. Chem.* **287(28)**, 23537-23548 (2012).
2. McCommis, K.S., Chen, Z., Fu, X., *et al.* Loss of mitochondrial pyruvate carrier 2 in the liver leads to defects in gluconeogenesis and compensation via pyruvate-alanine cycling. *Cell Metab.* **22(4)**, 682-694 (2015).
3. McCommis, K.S., Hodges, W.T., Brunt, E.M., *et al.* Targeting the mitochondrial pyruvate carrier attenuates fibrosis in a mouse model of nonalcoholic steatohepatitis. *Hepatology* **65(5),** 1543-1556 (2017).

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