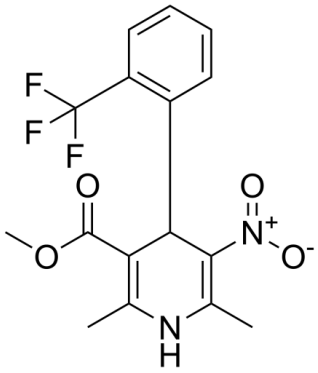
Data Sheet

Product Name:	Bay K 8644
Cat. No.:	CS-0002659
CAS No.:	71145-03-4
Molecular Formula:	$C_{16}H_{15}F_3N_2O_4$
Molecular Weight:	356.30
Target:	Calcium Channel
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Solubility:	DMSO : 83.33 mg/mL (ultrasonic)



BIOLOGICAL ACTIVITY:

Bay K 8644 ((±)-Bay K 8644) is a racemate consisting of two isomers (R)-(+)-Bay-K-8644 and (S)-(-)-Bay-K-8644[1]. Bay K 8644 is a **L-type Ca^{2+} channel** agonist with an **EC_{50}** of 17.3 nM. Bay K 8644 increases Ca^{2+} influx through sarcolemmal Ca^{2+} channels by increasing the open time of the channel. Bay K 8644 has vasoconstrictive effects[2][3]. ***In Vitro:*** In newborn rat ventricular cardiomyocytes, Bay K 8644 (1 μM) treatment increases L-type calcium current density in 2-day-old cells. The higher increase of L-type calcium current density by Bay K 8644 in 2-day- than in 7-day-old cultured cells could be interpreted as the result of a difference in the phosphorylation level of calcium channels for each stage of development[4]. ***In Vivo:*** A one time dose as low as 10 μg/kg of Bay K 8644 significantly elevates mean arterial pressure (MAP) in endotoxin-treated hypotensive rats while having minimal effects in normal rats. Bay K 8644 also causes a dose-dependent decrease in heart rate of 37% in endotoxin-treated rats and 39% in control rats[5].

References:

[1]. H Satoh, et al. Bay K 8644 increases resting Ca2+ spark frequency in ferret ventricular myocytes independent of Ca influx: contrast with caffeine and ryanodine effects. Circ Res. 1998 Dec 14-28;83(12):1192-204.

[2]. J P Gomez, et al. Effects of Bay K 8644 on L-type calcium current from newborn rat cardiomyocytes in primary culture. J Mol Cell Cardiol. 1996 Oct;28(10):2217-29.

[3]. N Ives,et al. BAY k 8644, a calcium channel agonist, reverses hypotension in endotoxin-shocked rats. Eur J Pharmacol. 1986 Nov 4;130(3):169-75.

[4]. W Schreibmayer, et al. Kinetic modulation of guinea-pig cardiac L-type calcium channels by fendiline and reversal of the effects of Bay K 8644. Br J Pharmacol. 1992 May;106(1):151-6.

[5]. G A Rae, et al. Interactions of calcium antagonists and the calcium channel agonist Bay K 8644 on neurotransmission of the mouse isolated vas deferens. Br J Pharmacol. 1989 Feb;96(2):333-40.

CAIndexNames:

3-Pyridinecarboxylic acid, 1,4-dihydro-2,6-dimethyl-5-nitro-4-[2-(trifluoromethyl)phenyl]-, methyl ester

SMILES:

O=C(C1=C(C)NC(C)=C([N+]([O-])=O)C1C2=C(C(F)(F)F)C=CC=C2)OC

Caution: Product has not been fully validated for medical applications. For research use only.

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