



alomone labs

Molecular Tools for the Neuroscience Community

DATA SHEETS

Certificate of Analysis

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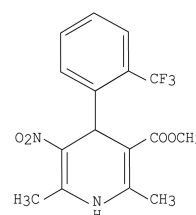
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PRODUCT # B-350
LOT # BK - 01; BK - 02

CERTIFICATE OF ANALYSIS

(±) – Bay K 8644

M.W.: 356.3
Formula & CAS No: C₁₆H₁₅F₃N₂O₄ [93468-89-4]
Purity: > 99% by HPLC.
Solubility: DMSO, Methanol or Ethanol.



Description:

(±)-Bay K 8644 is a dihydropyridine molecule that acts as an active L-type, voltage-gated Ca²⁺ channel agonist. It is a mixture of two optical isomers: the (-)-enantiomer has strong Ca²⁺ channel agonist properties, whereas the (+)-enantiomer has a weak Ca²⁺ channel antagonist activity.

The net activity of the racemic mix, is that of the (-)-enantiomer, agonistic activity. (±)-Bay K 8644 is a widely used L-type Ca²⁺ channel activator in various neuronal, muscle, endocrine, thyroid and other cell types.¹⁻⁴

Reconstitution:

Each vial contains 1mg, 5mg or 50mg of material. Dissolving of 1mg in 2.8ml of any solvent mentioned above gives a stock solution of 1mM.

Before dissolving the toxin, the tube should first be centrifuged, to concentrate the lyophilized toxin in the bottom of the tube. After centrifuging, the toxin must be dissolved into a stock solution using the appropriate solvent (see above), to a concentration of 10⁻³M. After preparing the stock solution, it should be divided into aliquots and can be stored this way for up to three months at -20°C.

Storage and Stability:

Lyophilized form: 2-3 weeks at room temperature.
Two years at -20° C.
Liquid form: Up to four weeks at 4° C.
Three months at -20° C.

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Known action:

(±) Bay K 8644 is an opener of all L-type channels (Ca_v1 family). In the presence of this agonist, channels tend to open for longer periods causing a large increase in the channel macroscopic response.

It was tested to increase L-type currents carried via cloned Ca_v1.1⁵, Ca_v1.2⁶ and Ca_v1.3⁷.

(±) Bay K 8644 was also shown to inhibit (by increasing the apparent inactivation) of a cloned and mutated *shaker* K_v channel⁸.

Bioassay:

Since the compound is lipid soluble it can be applied to the bath in cell attached patch clamp to visualize its effect on single L-type channels². It can be used in all electrophysiological configurations and in any assay to cause effects that are carried via L-type channels.

References:

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5. Johnson, B. D. *et al.* (1997) *J. Neurosci* **17**(4), 1243.
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