



<b>Catalog Number:</b>	MC11001	<b>Product Type:</b>	Small Molecule
<b>Bio-Activity:</b>	K+ Chanel Activator Cardiomyocyte Differentiation	<b>CAS #:</b>	10045-45-1
<b>Research Categories:</b>	Stem cells, neuroscience, cell death, oxidative stress	<b>Chemical Name:</b>	1-Ethyl-1,3-dihydro-2H- benzimidazol-2-one
<b>Solubility:</b>	Soluble in DMSO (up to 50 mg/ml) or in Ethanol (up to 30 mg/ml).	<b>Molecular Formula:</b>	C9H10N2O
<b>Purity:</b>	> 98%	<b>Molecular Weight:</b>	162.19
<b>Format:</b>	Powder	<b>Ship Temp:</b>	Ambient
<b>Storage:</b>	Room Temperature		

### Application Notes

#### Description/Data:

1-EBIO has been shown to be an activator of Ca<sup>2+</sup>-activated K<sup>+</sup> channels (SK) (1). It has also been shown to reverse ischemia-induced cognitive impairment (2) and display neuroprotective effects in ischemia-induced neuronal cell death (3). Research has also shown that 1-EBIO induces embryonic stem cell differentiation into cardiomyocytes (4). The molecule can also encourage production of superoxide and hydrogen peroxide in neutrophils leading to apoptosis (5).

#### References:

- 1) Adeagbo et al. (1999), 1-Ethyl-2-benzimidazolinone stimulates endothelial K(Ca) channels and nitric oxide formation in rat mesenteric vessels; *Eur. J. Pharmacol.*, 379 151
- 2) Orfila et al. (2014), Increasing small conductance Ca<sup>2+</sup>-activated potassium channel activity reverses ischemia-induced impairment of long-term potentiation; *Eur. J. Neurosci.*, 40 3179
- 3) Allen et al. (2011), SK2 channels are neuroprotective for ischemia-induced neuronal cell death; *J. Cereb. Blood Flow Metab.*, 31 2302
- 4) Muller et al. (2012), Ca<sup>2+</sup> activated K channels-new tools to induce cardiac commitment from pluripotent stem cells in mice and men; *Stem Cell Rev.*, 8 720

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5) Fay et al. (2006), SK channels mediate NADPH oxidase-independent reactive oxygen species production and apoptosis in granulocytes; *Proc. Natl. Acad. Sci. USA*, 103 17548

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