

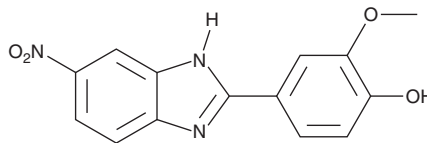
PRODUCT INFORMATION



CB-096

Item No. 36407

CAS Registry No.: 108883-90-5
Formal Name: 2-methoxy-4-(6-nitro-1H-benzimidazol-2-yl)-phenol
MF: C₁₄H₁₁N₃O₄
FW: 285.3
Purity: ≥98%
UV/Vis.: λ_{max}: 233, 284, 351 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

CB-096 is supplied as a solid. A stock solution may be made by dissolving the CB-096 in the solvent of choice, which should be purged with an inert gas. CB-096 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of CB-096 in these solvents is approximately 20 and 14 mg/ml, respectively. CB-096 is also slightly soluble in ethanol.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of CB-096 can be prepared by directly dissolving the solid in aqueous buffers. The solubility of CB-096 in PBS (pH 7.2) is approximately 0.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

CB-096 is an inhibitor of repeat-associated non-ATG (RAN) translation.¹ It selectively binds to the hexanucleotide GGGGCC repeat expansion (r(G₄C₂)^{exp}) hairpin r(G₄C₂)⁸ (EC₅₀ = 19 μM) over the anti-sense hairpin r(G₂C₄)⁸ and base-paired construct r(GGCC)₁₀. CB-096 (25 μM) inhibits RAN translation and the formation of nuclear stress granules in HEK293T cells expressing r(G₄C₂)₆₆ in an *in vitro* model of C9orf72 amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD) (c9ALS/FTD). It also induces relaxation of rat thoracic aortic rings pre-contracted with norepinephrine (EC₅₀ = 1.81 μM) and decreases systolic arterial pressure in conscious spontaneously hypertensive rats when administered at a dose of 100 mg/kg.²

References

1. Ursu, A., Wang, K.W., Bush, J.A., *et al.* Structural features of small molecules targeting the RNA repeat expansion that causes genetically defined ALS/FTD. *ACS Chem. Biol.* **15**(12), 3112-3123 (2020).
2. Navarrete-Vázquez, G., Hidalgo-Figueroa, S., Torres-Piedra, M., *et al.* Synthesis, vasorelaxant activity and antihypertensive effect of benzo[d]imidazole derivatives. *Bioorg. Med. Chem.* **18**(11), 3985-3991 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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