

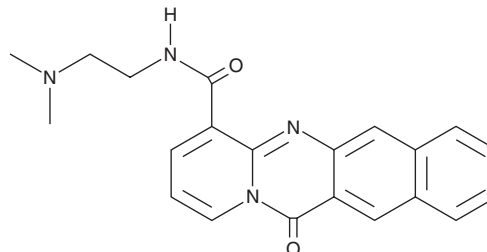
PRODUCT INFORMATION



BMH-21

Item No. 22282

CAS Registry No.: 896705-16-1
Formal Name: N-[2-(dimethylamino)ethyl]-12-oxo-12H-benzo[g]pyrido[2,1-b]quinazoline-4-carboxamide
MF: C₂₁H₂₀N₄O₂
FW: 360.4
Purity: ≥95%
UV/Vis.: λ_{max}: 233, 271, 364, 383 nm
Supplied as: A crystalline 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

BMH-21 is supplied as a crystalline solid. A stock solution may be made by dissolving the BMH-21 in the solvent of choice. BMH-21 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of BMH-21 in these solvents is approximately 0.2, 1, and 2 mg/ml, respectively.

BMH-21 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, BMH-21 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. BMH-21 has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

BMH-21 is an inhibitor of RNA polymerase I.¹ It binds to GC-rich sequences in DNA and ribosomal DNA (rDNA) and inhibits RNA polymerase I transcription *in vitro*. It inhibits expression of the 47S rRNA transcript (IC₅₀ = 60 nM), disrupts the structure of the nucleolus, and leads to removal of the RNA polymerase complex from rDNA by inducing dissociation and destruction of RPA194 through a proteasome-dependent mechanism. BMH-21 also activates p53 in the nanomolar range.² It reduces viability of several cancer cell lines but not of non-cancerous cells (IC₅₀s = 0.7, 1.9, ≥40, and 2.7 μM for A375, human diploid fibroblasts, primary human melanocytes, and HIMEC cells, respectively). BMH-21 intercalates with DNA but does not induce DNA damage *via* the ataxia-telangiectasia mutated (ATM) kinase pathway. BMH-21 (25 mg/kg) inhibits tumor growth in melanoma and colon cancer mouse xenograft models.¹

References

1. Peltonen, K., Colis, L., Liu, H., *et al.* A targeting modality for destruction of RNA polymerase I that possesses anticancer activity. *Cancer Cell* **25**(1), 77-90 (2014).
2. Peltonen, K., Colis, L., Liu, H., *et al.* Identification of novel p53 pathway activating small-molecule compounds reveals unexpected similarities with known therapeutic agents. *PLoS One* **5**(9), e12996 (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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM