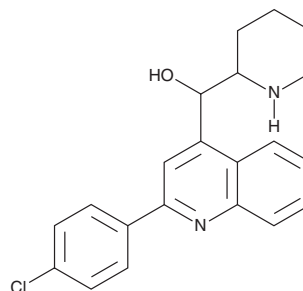


# PRODUCT INFORMATION



## Vacquinol-1 Item No. 16321

**CAS Registry No.:** 5428-80-8  
**Formal Name:** 2-(4-chlorophenyl)- $\alpha$ -2-piperidiny-4-quinolinemethano  
**Synonym:** NSC 13316  
**MF:** C<sub>21</sub>H<sub>21</sub>ClN<sub>2</sub>O  
**FW:** 352.9  
**Purity:**  $\geq$ 95%  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 262 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Vacquinol-1 is supplied as a crystalline solid. A stock solution may be made by dissolving the vacquinol-1 in the solvent of choice, which should be purged with an inert gas. Vacquinol-1 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of vacquinol-1 in these solvents is approximately 0.25, 1, and 10 mg/ml, respectively.

Vacquinol-1 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, vacquinol-1 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Vacquinol-1 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Vacquinols are a new class of quinine-derivatives that stimulate death in glioblastoma cells by massive macropinocytotic vacuolization, ATP depletion, and cytoplasmic membrane rupture.<sup>1</sup> A key effector of vacquinols is MAPK kinase 4 (MKK4).<sup>1</sup> Vacquinol-1 is an activator of MKK4-dependent macropinocytotic cell death in glioblastoma cells.<sup>1</sup> It induces ATP depletion in glioblastoma cells ( $IC_{50} = 3.14 \mu\text{M}$  at 1 day) without affecting fibroblasts, embryonic stem cells, or osteosarcoma cells.<sup>1</sup> Vacquinol-1 is orally bioavailable with good brain penetrance and excellent pharmacokinetics.<sup>1</sup> Oral administration of vacquinol-1 (20 mg/kg once daily for five days) substantially impairs the growth of engrafted glioblastoma cell tumors in mice and prolongs survival.<sup>1</sup>

### Reference

1. Kitambi, S.S., Toledo, E.M., Usoskin, D., *et al.* Vulnerability of glioblastoma cells to catastrophic vacuolization and death induced by a small molecule. *Cell* **157**(2), 313-328 (2014).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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