Pheophorbide a

Item No. 16072

CAS Registry No.: 15664-29-6
Formal Name: 9-ethenyl-14-ethyl-21R-(methoxycarbonyl)-4S,8,13,18-tetramethyl-20-oxo-3S-phorbinepropanoic acid
Synonym: 2-Deacetyl-2-vinylbacteriopheophorbide
MF: C_{35}H_{36}N_{4}O_{5}
FW: 592.7
Purity: ≥90% (mixture of diastereomers)
UV/Vis.: \( \lambda_{\text{max}} \): 225, 275, 331, 409, 537, 609, 666 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly

Laboratory Procedures

Pheophorbide a is supplied as a crystalline solid. A stock solution may be made by dissolving the pheophorbide a in the solvent of choice. Pheophorbide a is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of pheophorbide a in these solvents is approximately 1 mg/ml.

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

Description

Pheophorbide a is a product of chlorophyll breakdown that has been used as a photosensitizer in photodynamic therapy for the treatment of cancer.\(^1\) It has been reported to inhibit U87MG cells with an IC\(_{50}\) value of 2.8 µg/ml and demonstrates cytostatic activity specifically against glioblastoma cells without affecting normal cells.\(^2\) It also displays antiproliferative activity against melanoma, breast, and lung cancer cells \textit{in vitro} at 100 µg/ml.\(^3\)

References