# Data Sheet

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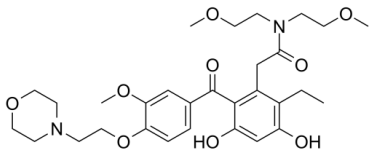
| **Product Name:** | KW-2478 |
| **Cat. No.:** | CS-0007047 |
| **CAS No.:** | 819812-04-9 |
| **Molecular Formula:** | C30H42N2O9 |
| **Molecular Weight:** | 574.66 |
| **Target:** | HSP |
| **Pathway:** | Cell Cycle/DNA Damage; Metabolic Enzyme/Protease |
| **Solubility:** | DMSO : ≥ 83.3 mg/mL (144.96 mM) |



## BIOLOGICAL ACTIVITY:

KW-2478 is an inhibitor of **Hsp90α**, with an **$IC_{50}$** of 3.8 nM, and has antitumor activity against various human hematological tumor cells. IC50 & Target: IC50: 3.8 nM (Hsp90α)[1] **In Vitro:** KW-2478 is an inhibitor of Hsp90, with an $IC_{50}$ of 3.8 nM for Hsp90α. KW-2478 shows anti-proliferative activity against multiple myeloma (MM) and non-Hodgkin's lymphoma (NHL), with $GI_{50}$s of 0.30 μM (OPM-2/GFP), 0.34 μM (KMS-11), 0.39 μM (RPMI 8226), 0.12 μM (NCI-H929), 0.36 μM (Raji), 0.098 μM (SR), and 0.33 μM μM (SC-1). KW-2478 also inhibits the transcription of c-Maf and Cyclin D1 genes by mainly suppressing the function of Cdk9[1]. **In Vivo:** KW-2478 (25-200 mg/kg, i.v.) inhibits tumor growth in combined immunodeficiency (SCID) mice bearing NCI-H929 cells, without body weight loss. KW-2478 (100 mg/kg, i.v.) causes degradation of the Hsp90 client proteins (IGF-1Rβ, c-Raf-1, Cdk9) levels and dephosphorylated Erk1/2 proteins in NCI-H929 tumors of mice[1].

## PROTOCOL (Extracted from published papers and Only for reference)

**Cell Assay:** [1]The cells are plated into 96-well plates and treated with **KW-2478**. After 72 hours of cultivation, cell viability is determined using **WST-1**. WST reagent is added to the wells, followed by incubation for 4 hours at 37°C. After that, the absorbance at 450 nm with reference at 650 nm is measured with a microplate spectrophotometer[1].

**Animal Administration:** KW-2478 is formulated in saline[1].[1]Mice[1]

**Severe combined immunodeficient (SCID) mice** are intraperitoneally injected with anti-asialo GM1 antibody. The next day, all mice are subcutaneously inoculated with **NCI-H929 cells ($1\times10^7$ cells)** suspended in PBS containing 50% of Matrigel. After 10 days, tumor volume is measured using the Antitumor test system II, a computer-operated system including software and instruments. SCID mice with tumors (190 to 290 $mm^3$) are selected. After randomly grouping, **saline** (vehicle) or **KW-2478** is **intravenously** administered to mice **once or twice daily for 5 days**. 17-AAG is intravenously administered to mice. Tumor volume is calculated by the Anti-tumor test system II as follows: Tumor volume=DL×DS×DS×1/2. Fourteen days after the initial administration, blood samples of each mouse are obtained, followed by measurement of serum M protein (Ig kappa chain) with Human Kappa-b&f ELISA Quantitation Kit. The statistical analysis is performed using SAS software[1].

## References:

[1]. Nakashima T, et al. New molecular and biological mechanism of antitumor activities of KW-2478, a novel nonansamycin heat shock protein 90 inhibitor, in multiple myeloma cells. Clin Cancer Res. 2010 May 15;16(10):2792-802.

## CAIndexNames:

Benzeneacetamide, 2-ethyl-3,5-dihydroxy-N,N-bis(2-methoxyethyl)-6-[3-methoxy-4-[2-(4-morpholinyl)ethoxy]benzoyl]-

## SMILES:

O=C(N(CCOC)CCOC)CC1=C(C(C2=CC=C(OCCN3CCOCC3)C(OC)=C2)=O)C(O)=CC(O)=C1CC

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 732-484-9848 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA