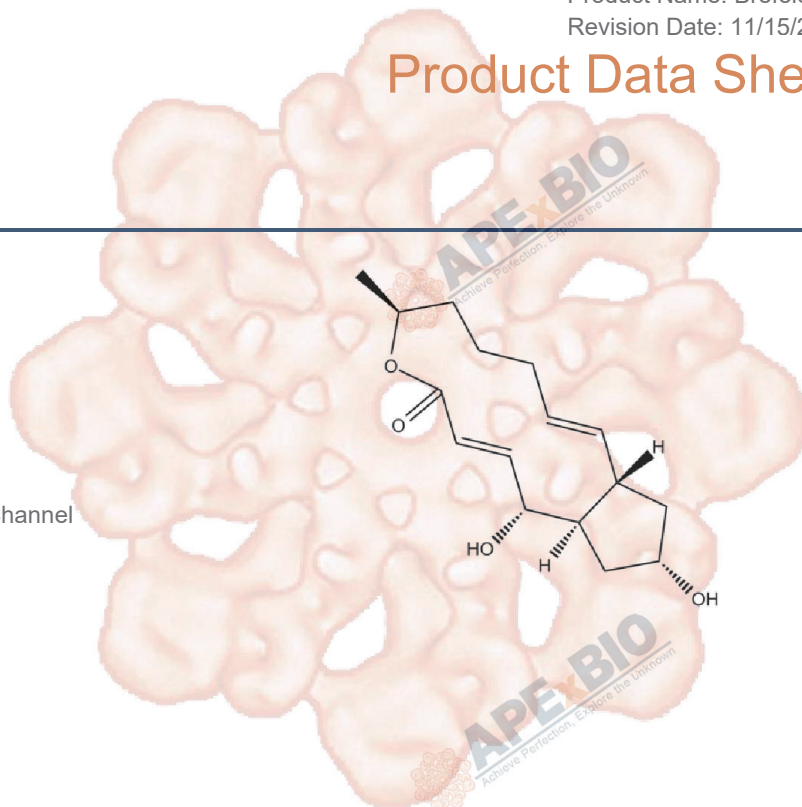


Product Data Sheet

Brefeldin A

| | |
|------------------|--|
| Cat. No.: | B1400 |
| CAS No.: | 20350-15-6 |
| Formula: | C ₁₆ H ₂₄ O ₄ |
| M.Wt: | 280.36 |
| Synonyms: | |
| Target: | Membrane Transporter/Ion Channel |
| Pathway: | ATPase |
| Storage: | Store at -20°C |



Solvent & Solubility

insoluble in H₂O; ≥11.73 mg/mL in EtOH with ultrasonic; ≥4.67 mg/mL in DMSO

In Vitro

| Preparing Stock Solutions | Solvent | Mass | 1mg | 5mg | 10mg |
|---------------------------|---------|------|---------------|------------|------------|
| | | | Concentration | | |
| | 1 mM | | 3.5668 mL | 17.8342 mL | 35.6684 mL |
| | 5 mM | | 0.7134 mL | 3.5668 mL | 7.1337 mL |
| | 10 mM | | 0.3567 mL | 1.7834 mL | 3.5668 mL |

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary

ATPase inhibitor

IC₅₀ & Target

Cell Viability Assay

In Vitro

Cell Line: Colorectal cancer cell line HCT116 cells; MCF-7 cells; Hela cells; Normal rat kidney cells (NRK); MDA-MB-231 cells

Preparation method:

The solubility of this compound in DMSO is >4.7mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

| | | |
|---------|--------------------------|---|
| | Reacting conditions: | 5 µg/ml, 1 µg/ml; 3-40 h; 37°C |
| | Applications: | BFA treatment (15 h or 40 h) of normal rat kidney (NRK) cells caused dramatic swelling of the Endoplasmic Reticulum (ER) and shifted its localization to the periphery of the cells. BFA affected Golgi structure and MT and actin organization. BFA preferentially induced cell death in MDA-MB-231 suspension cultures with the EC50 of 0.016 µg/mL. BFA effectively inhibited clonogenic activity and the migration and matrix metalloproteinases-9 (MMP-9) activity of MDA-MB-231 cells by down-regulating the breast CSC marker CD44 and anti-apoptotic proteins Bcl-2 and Mcl-1, as well as the reversal of epithelial-mesenchymal transition. Treatment with BFA (1 µg/ml) induced p53 expression in MCF-7 cells and Hela cells. In colorectal cancer cell line HCT116 cells, BFA induced cells apoptosis. |
| In Vivo | Animal experiment | |
| | Applications: | |
| | Other notes: | Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal. |

Product Citations

1. Brian D. Rutter. "CONTENTS AND FUNCTIONS OF EXTRACELLULAR VESICLES ISOLATED FROM PLANTS." Indiana University. 2019.
2. Zhang M, Sun H, et al. "COPI-Mediated Nuclear Translocation of EGFRvIII Promotes STAT3 Phosphorylation and PKM2 Nuclear Localization." Int J Biol Sci. 2019 Jan 1;15(1):114-126.PMID:30662352
3. Liu C, Zhang Y, Ren H. "Actin Polymerization Mediated by AtFH5 Directs the Polarity Establishment and Vesicle Trafficking for Pollen Germination in Arabidopsis." Mol Plant. 2018 Nov 5;11(11):1389-1399.PMID:30296598
4. Rutter BD, Innes RW. "Extracellular Vesicles Isolated from the Leaf Apoplast Carry Stress-Response Proteins." Plant Physiol. 2017 Jan;173(1):728-741. doi:10.1104/pp.16.01253.PMID:27837092

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References

- [1]. Alvarez C, et al. Brefeldin A (BFA) disrupts the organization of the microtubule and the actin cytoskeletons. Eur J Cell Biol. 1999 Jan;78(1):1-14.
- [2]. Tseng CN, et al. Brefeldin A reduces anchorage-independent survival, cancer stem cell potential and migration of MDA-MB-231 human breast cancer cells. Molecules. 2014 Oct 29;19(11):17464-77.
- [3]. W.C. Lin, Y.C. Chuang, Y.S. Chang, M.D. Lai, Y.N. Teng, I.J. Su, C.C. Wang, K.H. Lee, J.H. Hung, Endoplasmic reticulum stress stimulates p53 expression through NF-kappaB activation, PLoS One, 7 (2012) e39120.
- [4]. P.M. Wierzbicki, M. Kogut, J. Ruczynski, K. Siedlecka-Kroplewska, L. Kaszubowska, A. Rybarczyk, M. Alenowicz, P. Rekowski, Z. Kmiec, Protein and siRNA delivery by transportan and transportan 10 into colorectal cancer cell lines, Folia Histochem Cytobiol, (2014).

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short-term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.



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