

Brefeldin A

✓ 5 mg

Orders ■ 877-616-CELL (2355)
orders@cellsignaling.com

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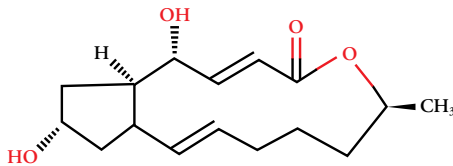
Web ■ www.cellsignaling.com

New 09/08

This product is for *in vitro* research use only and is not intended for use in humans or animals.
This product is not intended for use as a therapeutic or in diagnostic procedures.

Background: Brefeldin A (BFA) is a fungal metabolite demonstrated to reversibly interfere with anterograde transport from the endoplasmic reticulum to the Golgi apparatus (1,2). While initially isolated as an antibiotic (3), and does have a wide range of antibiotic activity, it is primarily used as a biological research tool for studying protein transport. Treatment leads to a rapid accumulation of proteins within the ER and collapse of the Golgi stacks. Treatment with BFA can also inhibit protein secretion (4) and prolonged exposure can induce apoptosis (5). The main target of BFA appears to be ADP-ribosylation factor (ARF), which is responsible for association of coat protein to the Golgi membrane (6,7).

Molecular Formula: C₁₆H₂₄O₄

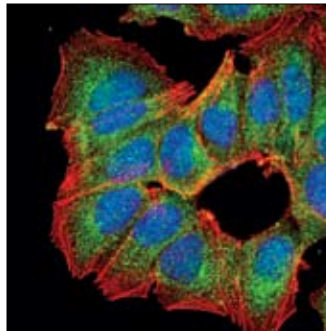
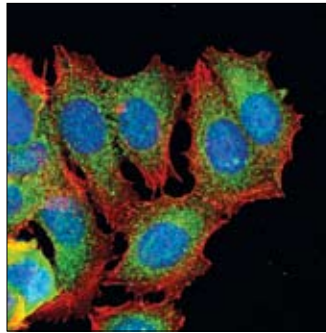
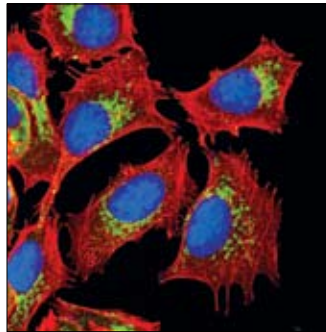


Molecular Weight: 280.4

Directions for Use: Brefeldin A is supplied as a 5 mg powder. Store at -20°C. Brefeldin A is soluble in DMSO (also ethanol and methanol) and stock solutions (typically 10 mg/ml) should be stored at -20°C. Working concentrations and length of treatment can vary depending on desired effect. Inhibition of ER to Golgi trafficking was observed as low as 100 ng/ml and apoptosis was observed with prolonged treatment at 10 µg/ml.

Background References:

- (1) Klausner, R.D. et al. (1992) *J Cell Biol* 116, 1071–80.
- (2) Pelham, H.R. (1991) *Cell* 67, 449–51.
- (3) Tamura, G. et al. (1968) *J Antibiot (Tokyo)* 21, 160–1.
- (4) Misumi, Y. et al. (1986) *J Biol Chem* 261, 11398–403.
- (5) Shao, R.G. et al. (1996) *Exp Cell Res* 227, 190–6.
- (6) Helms, J.B. and Rothman, J.E. (1992) *Nature* 360, 352–4.
- (7) Randazzo, P.A. et al. (1993) *J Biol Chem* 268, 9555–63.



Confocal immunofluorescent analysis of MCF-7 cells, untreated (upper) or treated with Brefeldin A for 1.5 hours at 100 ng/ml (middle) or 20 µg/ml (lower), using a Golgin-97 antibody (green). Actin filaments have been labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5™ (fluorescent DNA dye).

Storage: Store at -20°C.

Companion Products:

Phototope®-HRP Western Blot Detection System, Anti-rabbit IgG, HRP-linked Antibody #7071

Anti-rabbit IgG, HRP-linked Antibody #7074

Prestained Protein Marker, Broad Range (Premixed Format) #7720

Biotinylated Protein Ladder Detection Pack #7727

20X LumiGLO® Reagent and 20X Peroxide #7003

Material Safety Data Sheet (MSDS) for Brefeldin A

I. Identification:

Product name: Brefeldin A
Product Catalog: 9972
Manufacturer Supplier: Cell Signaling Technology
 3 Trask Lane
 Danvers, MA 01923 USA
 978-867-2300 TEL
 978-867-2400 FAX
 978-578-6737 EMERGENCY TEL

II. Composition/Information:

Substance Name: Brefeldin A
Synonyms: BFA, Ascotoxin, Cyanaein, Cyanein, Descumbin, NSC 56310, Nectrolide, Synergisidin
CAS#: 20350-15-6
Molecular Weight: 280.4
Molecular Formula: C₁₆H₂₄O₄

III. Hazard Identification:

Harmful. May be an irritant. May be harmful if inhaled, ingested or contact with skin, eyes.

NFPA Rating: Health: 1 Flammability: 0 Reactivity: 0

IV. First Aid Measures:

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, get medical attention.
Ingestion: If swallowed, wash out mouth with water if or, provided that person is conscious. Get medical attention.
Skin exposure: In case of contact, immediately wash skin with soap and water for at least 15 minutes. Remove contaminated clothing. Wash clothing before reuse.
Eye exposure: In case of contact with eyes, immediately flush eyes with water for at least 15 minutes. Get medical attention.

V. Fire Fighting Measures:

Flash Point: Data not available.
Autoignition Temperature: Data not available.
Explosion: Data not available.
Fire extinguishing media: Water spray, dry chemical, alcohol foam, or carbon dioxide.
Firefighting: Wear protective clothing and self-contained breathing apparatus to prevent contact with skin and eyes. May emit toxic fumes under fire conditions.

VI. Accidental Release Measures: Wear appropriate personal protective equipment as indicated in Section VIII. Sweep up material and avoid raising dust. Transfer to a closed chemical waste container for disposal. Wash spill site after material has been picked up for disposal.

VII. Handling And Storage:

Storage: Store in tightly closed container at -20°C.
 Avoid inhalation. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

VIII. Exposure Controls/Personal:

Ventilation System: A system of local and/or general exhaust is required.
Skin Protection: Wear compatible chemical resistant gloves and protective clothing.
Eye protection: Wear chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

IX. Physical And Chemical Properties

Appearance: white powder
pH: data not available
Melting Point: 203-203.5°C
Boiling Point: data not available
Freezing Point: data not available
Volatile Organic Compounds: data not available
Solubility: soluble in DMSO or ethanol

X. Stability and Reactivity:

Stability: Stable under normal conditions. Avoid strong oxidizing agents.
Hazardous Decomposition: Data not available.

XI. Toxicological Information:

Acute Effects: LD50 mouse, intraperitoneal, 250 mg/kg.
Chronic Effects: Not established. May be harmful if inhaled, ingested or absorbed.

Potential Health Effects:

Inhalation: May be harmful, may be irritating to mucous membranes and upper respiratory tract.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May be harmful if absorbed through the eyes. May cause eye irritation.
Ingestion: Harmful if swallowed.

XII. Ecological Information:

Data not available.

XIII. Disposal Considerations: Dispose of in accordance with federal, state, local environmental regulations.

XIV. Transport Information:

DOT: Proper Shipping Name: This substance is considered non-hazardous for transport.

IATA: Proper Shipping Name: This substance is considered non-hazardous for air transport.

XV. Regulatory Information:

EU Regulations/Classifications/Labeling Information: None.
US Regulatory Information: None.
SARA Listed: None.
Canada (WHMIS): DSL No, NDSL No.

XVI. Other Information:

This compound is sold only for research use only. It is not for use in humans. To the best of our knowledge, this document is accurate. It is intended to serve as a guide for safe use of this product in a laboratory setting by experienced personnel. The burden of safe use of this material rests entirely with the user. Cell Signaling Technology, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product.