

## PRODUCT DATA SHEET

**Product:** BES-H<sub>2</sub>O<sub>2</sub>

**Cat. No.:** BC-327 (1 mg)

**Description:**

Reactive oxygen species (ROS) such as superoxide (O<sub>2</sub><sup>•-</sup>), hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>), and the hydroxyl radical (HO•) are important mediators of pathological processes in various diseases. 2',7'-Dichlorofluorescein (DCFH) and its diacetyl derivative have been widely used as fluorescent probes for measuring cell-derived H<sub>2</sub>O<sub>2</sub>, but these compounds suffer from the major drawback that they are poorly selective toward H<sub>2</sub>O<sub>2</sub>. BES-H<sub>2</sub>O<sub>2</sub> is a probe for cell-derived H<sub>2</sub>O<sub>2</sub> based on a non-oxidative fluorescence mechanism with high selectivity. It is applicable to clarifying cell response as well as dynamic function of H<sub>2</sub>O<sub>2</sub> with diseases.

- Highly selective toward H<sub>2</sub>O<sub>2</sub>
- Permeable to cell membranes
- Detects cell-derived H<sub>2</sub>O<sub>2</sub>
- Applicable to Molecular Imaging

**Chemical Name:**

[3'-O-Acetyl-6'-O-pentafluorobenzenesulfonyl-2',7'-difluorofluorescein]

**Formula:**

C<sub>28</sub>H<sub>11</sub>F<sub>7</sub>O<sub>8</sub>S

**Molecular Weight:**

640.44

**Format:**

White to slightly pale brown crystalline powder or powder.

**Solubility:**

DMSO, DMF, acetonitrile at 20 mM.

**Wavelengths:**

λ<sub>ex</sub>: 485 ± 20 nm

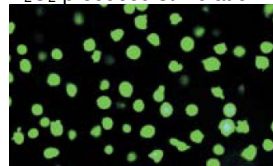
λ<sub>em</sub>: 515 ± 20 nm

**Purity:**

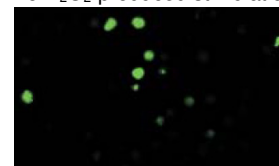
≥ 94% as determined by HPLC (initial measurement).

**Fluorescent images**

H<sub>2</sub>O<sub>2</sub>-produced stimulation

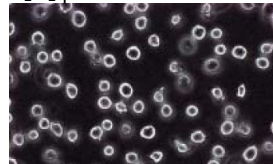


No H<sub>2</sub>O<sub>2</sub>-produced stimulation



**Phase-contrast images**

H<sub>2</sub>O<sub>2</sub>-produced stimulation



No H<sub>2</sub>O<sub>2</sub>-produced stimulation

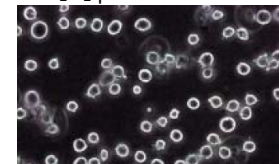


Figure: Fluorescent images of Jurkat T cells with BES-H<sub>2</sub>O<sub>2</sub> and the same-field phase contrast images. Jurkat T cells were cultured in a medium with 50 μM BES-H<sub>2</sub>O<sub>2</sub> for one hour. Then, one group of them was cultured in a medium with 5 mM butyric acid (H<sub>2</sub>O<sub>2</sub>-produced stimulation), whereas the other in a medium without butyric acid (No H<sub>2</sub>O<sub>2</sub>-produced stimulation), each for one hour.

**Limitations:**

For *in vitro* research use only. Not for use in diagnostics or in humans.

**Warranty:**

No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.

