

**FDG [Fluorescein di-beta-D-galactopyranoside] \*CAS#: 17817-20-8\***Catalog number: 14001  
Unit size: 5 mg**Product Details**

Storage Conditions	Freeze (<math>-15\text{ }^{\circ}\text{C}</math>), Minimize light exposure
Expiration Date	12 months upon receiving

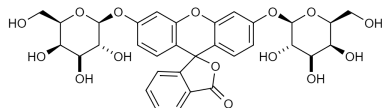
**Chemical Properties**

Appearance: Light yellow solid

Molecular Weight: 656.58

Soluble In: DMSO

Chemical Structure

**Spectral Properties**

Excitation Wavelength: 498 nm

Emission Wavelength: 517 nm

**Applications**

Although chromogenic assays of beta-galactosidase activity (i.e. X-Gal) are still widely used, the recent advance in fluorescence instrumentation has made fluorogenic substrates (such as FDG and MUG) be several orders of magnitude more sensitive. FDG is considered to be one of the most sensitive fluorogenic substrates available for detecting beta-galactosidase. The colorless and nonfluorescent FDG is hydrolyzed to highly fluorescent fluorescein, which exhibits excellent spectral properties that match the optimal detection window of most fluorescence instruments. Galactosidase-catalyzed hydrolysis of FDG can be followed by fluorescence increase around 520 nm. Alternatively, FDG can also be used to detect  $\beta$ -galactosidase in a chromogenic mode since the enzymatic product (fluorescein) exhibits a large extinction coefficient (close to  $100,000\text{ cm}^{-1}\text{mol}^{-1}$ ). FDG has been widely used for identifying LacZ-positive cells with fluorescence microscopy and flow cytometry. It is also used to detect beta-galactosidase expression in live cells. Fluorescence-based assays employing FDG are also reported to be 100 to 1000-fold more sensitive than radioisotope-based ELISAs.