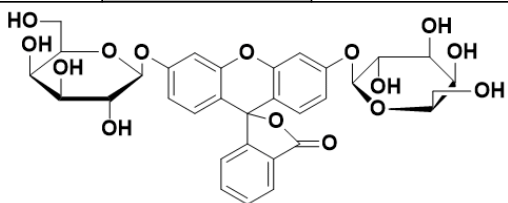


| Certificate of Analysis<br>(C of A) |  |                                                                                     |          |                                              |                                                 |             |  |             |  |
|-------------------------------------|--|-------------------------------------------------------------------------------------|----------|----------------------------------------------|-------------------------------------------------|-------------|--|-------------|--|
| Name:                               |  | FDG<br>Fluorescein di-b-D-galactopyranoside                                         |          |                                              |                                                 |             |  |             |  |
| Catalog Number:                     |  | 6983                                                                                | Lot:     |                                              | 50274                                           |             |  |             |  |
| CAS Number:                         |  | 17817-20-8                                                                          | Formula: |                                              | C <sub>32</sub> H <sub>32</sub> O <sub>15</sub> |             |  |             |  |
| Molecular Weight:                   |  | 656.60 (g/mol)                                                                      |          |                                              |                                                 |             |  |             |  |
|                                     |  |                                                                                     |          |                                              |                                                 |             |  |             |  |
|                                     |  | Observed                                                                            |          | Standard                                     |                                                 |             |  |             |  |
| HPLC Purity:                        |  | 99% at 254 nm                                                                       |          | ≥ 95% at 254 nm                              |                                                 |             |  |             |  |
| Absorption (Methanol)               |  |                                                                                     |          |                                              |                                                 |             |  |             |  |
| Wavelength (λ <sub>max</sub> ):     |  | 273 nm                                                                              |          | 273 ± 3 nm                                   |                                                 |             |  |             |  |
| Extinction:                         |  | 6,500 cm <sup>-1</sup> M <sup>-1</sup>                                              |          | 6,500 ± 600 cm <sup>-1</sup> M <sup>-1</sup> |                                                 |             |  |             |  |
| TLC Purity:                         |  | > 98%                                                                               |          | ≥ 95%                                        |                                                 |             |  |             |  |
| TLC System:                         |  | 75:20:5 Chloroform/ Methanol/ Acetic acid                                           |          |                                              |                                                 |             |  |             |  |
| Fluor Bkgd:                         |  | <10 ppm at 518nm                                                                    |          | < 100 ppm                                    |                                                 |             |  |             |  |
| Observed color:                     |  | Slight Yellow                                                                       |          | White to Off-white or Slight Yellow          |                                                 |             |  |             |  |
| Storage:                            |  | Freeze: Store at -5 to -30°C (F), Protect from moisture (D), Protect from light (L) |          |                                              |                                                 |             |  |             |  |
| Production Lot:                     |  | 14698                                                                               | Release: |                                              | 05-Jan-2015                                     | Expiration: |  | 05-Jan-2025 |  |
| Structure:                          |  |  |          |                                              |                                                 |             |  |             |  |

This data reflects the accuracy of the analysis of the subject lot  
 For research use only. Not for human use. No animal source.  
 This material is chemically synthesized and manufactured in the USA

**Approved by:** Dianna M Wineinger  
 Analytical Services Manager

**Date:** 05-Jan-2015

**Signature:** Dianna M Wineinger