



JOHNS HOPKINS
UNIVERSITY

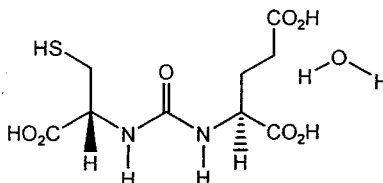
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Specification Sheet for DCFBC Precursor Standard

Certificate of Analysis



Chemical Name: 2-[3-(1-Carboxy-2-mercapto-ethyl)-ureido]-pentanedioic acid monohydrate

Generic Name: GCU

Batch: 085

Manufactured: December 3, 2008

QC Date: July 2, 2009

¹H-NMR (CD₃OD) δ4.58 (t, *J* = 4Hz, 1H), 4.34 (dd, *J* = 5.2, 8.6Hz, 1H), 2.95 (d, *J* = 4.8Hz, 2H), 2.45(m, 2H), 2.18 (m, 1H), 1.93 (m, 1H).

¹³C-NMR (D₂O) δ178.8, 177.8, 176.0, 160.0, 56.5, 54.0, 31.6, 27.7, 27.3.

Optical Rotation: [α]_D²² +16.3 (c 0.008, MeOH)

ESI-MS: Calcd. for C₉H₁₅N₂O₇S [M + H]⁺ 295.1, found 294.9; Calcd for C₁₈H₂₈N₄O₁₄S₂Na [2M + Na]⁺ 610.9, found 610.7

Elemental Analysis: Calcd. for C₉H₁₅N₂O₇S·H₂O, 312.2969, C 34.61, H 5.16, N 8.97, S 10.27. Found C 34.62, H 5.11, N 8.85, S 10.05.

Purity: 94.0%

HPLC Conditions: Analytical (4.6 X 150mm) 5μ C-18 Atlantis T3 column (Waters, Milford Massachusetts), 220nm, 10% ethanol/90% 0.1M NaH₂PO₄, pH 4.4, 1.5 mL/min, retention time 2.5 min.

Stability: Stable for at least 1 year if stored in freezer at -20°C.

Ronnie C. Mease

July 7, 2009