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ProductInformation

Cardiogreen

Product Number **I 2633**
Store at Room Temperature

Replacement for Product Number 228869

Product Description
Molecular Formula: $C_{43}H_{47}N_2NaO_6S_2$
Molecular Weight: 775.0
CAS Number: 3599-32-4
λ_{max}: 775 nm (water)[3]
Extinction Coefficient: E^{mM} = 10.7-11.6 (393-394 nm), 7.78-8.82 (322 nm), 14.0-16.6 (262 nm), and 25.1-29.5 (220-223 nm)
Synonyms: 4,5-benzoindotricarbocyanine, Indocyanine Green, Foxgreen, IC Green, ICG

Cardiogreen is a negatively charged polymethine dye that forms noncovalent fluorescent complexes with proteins. This "pseudofluorogenic" property has been utilized for protein determination by capillary electrophoresis with diode laser-induced fluorescence detection.[1] Cardiogreen has been used to resolve several labeled proteins including: human serum albumin, ribonuclease A, transferrin, and cytochrome c.

After intravenous injection, indocyanine green is bound to plasma protein, primarily albumin, is rapidly taken up by the liver, and then excreted unchanged into the bile. For this reason, it is an indicator dye used for assessing cardiac output and liver function.[2]

ICG mediated phototherapy induces cytoplasmic vesiculation, changes in endoplasmic reticulum, Golgi complex, and perinuclear cisternae, and nuclear chromatin condensation. Human skin cells were stained with ICG (1- 50 μM) and subjected to irradiation with a dye laser and the toxicity evaluated with MTT (Product Code TOX-1).[4] ICG has also been used with a pulsed diode laser for welding of biomaterials to tissue[5] and for wound closure.[6]

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
Indocyanine is soluble in water (1 mg/ml). Indocyanine is not readily soluble in saline. It should first be dissolved in water, then diluted with saline for applications requiring isotonic solutions.

Storage/Stability
Indocyanine solutions are unstable in water. A 0.5% solution has a pH approximately 6 and is stable for approximately 8 hours.[1] Solutions should be made fresh daily.

References
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2. Martindale The Extra Pharmacopoeia, 29th ed., Reynolds, J. E. F., ed., The Pharmaceutical Press (London, England: 1989), pp. 941-942.
3. The Sigma Aldrich Handbook of Stains, Dyes and Indicators, Green, F. J., Aldrich Chemical Co. (Milwaukee, WI: 1990), p 407.
4. Abels, C., et al., Indocyanin Greeen and laser irradiation induce photooxidation. Arch. Dermatol. Res., **292**, 404-411 (2000).
5. Byrd, B. D., et al., Absorption properties of alternative chromophores for use in laser tissue soldering applications. Biomed Sci Instrum. **39**, 6-11 (2003).
6. Hodges, D. E., et al., Surgical adhesives for laser-assisted wound closure. J. Biomed. Opt. **6(4)**, 427-431 (2001).

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