Cardiogreen

Product Number 1 2633
Store at Room Temperature

Replacement for Product Number 228869

Product Description
Molecular Formula: C₄₃H₄₇N₂NaO₆S₂
Molecular Weight: 775.0
CAS Number: 3599-32-4
λ\text{max}: 775 nm (water)³
Extinction Coefficient: E₉₅M = 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 tissue⁵ 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.³ Solutions should be made
fresh daily.

References
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Reynolds, J. E. F., ed., The Pharmaceutical Press
3. The Sigma Aldrich Handbook of Stains, Dyes and
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(Milwaukee, WI: 1990), p 407.
4. Abels, C., et al., Indocyanin Green and laser
5. Byrd, B. D., et al., Absorption properties of
alternative chromophores for use in laser tissue
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6. Hodges, D. E., et al., Surgical adhesives for laser-
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