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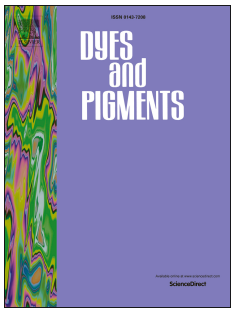

Polyamine-modified near-infrared cyanine dyes for targeting the nuclei and nucleoli of cells

Sandra G. König, Roland Krämer

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Polyamine-Modified Near-Infrared Cyanine Dyes for Targeting the Nuclei and Nucleoli of Cells

*Authors: Sandra G. König, Roland Krämer**

*Institute of Inorganic Chemistry, Heidelberg University, Im Neuenheimer Feld 274, 69120 Heidelberg, Germany; * = Corresponding author, kraemer@aci.uni-heidelberg.de*

Abstract

Near-infrared fluorescent probes have attracted great interest for bio-imaging applications since they allow for imaging with reduced background from cellular autofluorescence and deeper penetration depth than visible light. Herein, we present a library of 17 polyamine-modified near-infrared cyanine dyes differing in polyamine chain lengths or dye backbone. All dyes were characterized regarding their photophysical properties and show good to excellent fluorescence brightness values along with excellent solubility in water. The investigation of selective dye accumulation in cells allowed identification of a probe that selectively stains the nucleus in five different cell lines as well as probes that give promising results for the selective labeling of nucleoli.

Keywords

Heptamethine dyes, Cyanines, Indotricarbocyanines, Near-infrared, Fluorescence Imaging, Cell labeling, Nucleus staining

TOC Entry