

论文

新型荧光素类细胞钙离子荧光探针Fluo-CI的设计、合成及表征

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摘要:

设计合成了一种新型荧光素类细胞钙离子荧光探针, 并对其结构及光谱特性进行了表征.

关键词: 荧光素衍生物 荧光探针 细胞内钙离子

Design, Synthesis and Characterization of Novel Fluorescein-based Calcium Fluorescent Probe Fluo-CI

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Abstract:

The role of intracellular calcium ions is of high interest in the fields of cellular biology. Calcium plays a critical role in regulating numerous physiological cellular phenomena. There is a close relation between the change in the consent ration of free calcium and the function of the cell, signal transmission and the cell injury or death. So it is very important to determine the consentration and the distribution of the intracellular free calcium. Fluorescent indicators have been widely used for imaging calcium. They are highly sensitive and offer imaging by fluorescent microscopy in an easier and less cell damaging way than other methods. In this paper we describe the design, synthesis, characterization and spectral characteristic of novel fluorescein-derived calcium fluorescent probes. The fluorescent spectrum and the calcium titration curve of the novel compound Fluo-CI were reported for the first time. The synthesis of fluorescein-based calcium fluorescent probe Fluo-CI was researched. The calcium titration curve of Fluo-CI shows that after chelating with calcium the fluorescent relative intensity has been enhanced greatly.

Keywords: Fluorescein derivative Fluorescent probe Intracellular calciumion

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参考文献:

1. Tsien R. Y.. Ann. Rev. Biophys. Bioeng.[J], 1983, 12: 91—95
2. HAN Xiao-Jun(韩晓军), SONG Yong-Hai(宋永海), WU Zheng-Yan(吴正岩), *et al.*. Chem. J. Chinese Universities(高等学校化学学报)[J], 2001, 22(8): 1298—1300
3. Allbritton N. L., Meyer T., Stryer L.. Science[J], 1992, 258: 1812—1815
4. GAO Feng-Xin(高凤新), LI Ya-Ping(李亚平), LI Qian-Shu(李前树). Chem. J. Chinese Universities(高等学校化学学报)[J], 2004, 25(9): 1727—1729
5. Carafoli E. J.. Biol. Chem.[J], 1992, 267: 2115—2118
6. Iino M.. J. Gen. Physiol.[J], 1990, 95: 1103—1122
7. Raju B., Murphy E., Levy L. A., *et al.*. Am. J. Physiol.[J], 1989, 265: C540—C548
8. Michael S., Raoul K., Michael K., *et al.*. Anal. Chem.[J], 1996, 68: 1414—1418
9. Pething R., Kuhn M., Payne R., *et al.*. Cell Calcium[J], 1989, 10: 491—498
10. Tsien R. Y., Pozzan T., Rink T. J.. J. Cell Biol.[J], 1982, 94: 325—334
11. YU Li-Fang(于力方), LIAO Jie(廖杰), ZHANG Guo-Qing(张国庆). Labeled Immunoassays & Clin. Med.(标记免疫分析与临床)[J], 2005, 12(3): 161—163
12. SHI Yu-Ling(石玉玲), XI Song(习松). Laboratory Medicine(检验医学)[J], 2005, 20(3): 290—291
13. MA Xiao-Dong(马晓冬), ZHU Xiao-Liang(朱晓亮), ZHAO Qing(赵青), *et al.*. Chinese Journal of Medical Physics(中国医学物理学杂志)[J], 1999, 16(3): 180—182
14. YUE Jian-Ning(岳剑宁), KONG Fan-Yuan(孔繁元). Chin. J. Pathol.(中华病理学杂志)[J], 2002, 31(3): 266—267
15. Tsien R. Y.. Biochemistry[J], 1980, 19: 2396—2404

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2. 白海鑫, 杨成, 杨秀荣. 牛血清白蛋白与Indo-1相互作用的荧光光谱法研究[J]. 高等学校化学学报, 2007,28(2): 227-233

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