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相关技术

OCT技术在发育生物学中的应用

李剑平[1], 李栋[2]

1.山东大学信息科学与工程学院，山东 济南 250100; 2.山东大学生命科学学院，山东 济南250100

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摘要

基于光学低相干反射测量而发展起来的光学相干层析技术（ Optica1 Coherence Tomography,OCT）是一种新型的成像技术，它可以对强散射介质如生物组织实施非侵入性的快速活体成像。与传统的组织切片相比,OTC可以大大减少对发育形态成像所需的时间、复杂程度及成本。非接触和非侵入式的成像方式有助于研究个体发育中由基因变异所引起的形态和功能变化，因而在发育生物学的研究当中有着广阔的应用前景。概述了OCT技术在发育生物学当中诸方面的应用情况。

关键词 光学相干层析技术 发育生物学 生物组织 成像

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Applications of OCT Technique in Developmental Biology

LI Jian-ping[1], LI Dong[2]

1.School of Information Science and Enginerring, Shandong University, Jinan 250100, China; 2.School of Life Science,Shandong Uniersity, Jinan 250100, China

Abstract

Optical coherence tomography(OCT) based on optical reflectance measurement of low coherence is a novel imaging technology that performs the noninvasive and high resolution fast imaging of high scattering media such as biological tissue.OCT could result in a significant reduction in the time, complexity and cost for the imaging of developmental morphology as compared with the conventional histology. The non contact, noninvasion imaging with OCT in vivo can be used to track the development of single speciment.The use of high speed OCT imaging technology of cardiac structures enables the functional imaging to be performed in vivo of these speciments.OCT imaging is conductive to the developmental research on the variation of function and morphology due to gene mutation. Applications in developmental biology are presented in this paper.

Key words optical coherence tomography developmental biology biological tissue imaging

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通讯作者 李剑平