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生物芯片技术的原理与应用 The Principle and Application of Bio - Chip Technology

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摘要 生物芯片是指将大量生物讯息密码(寡核苷酸、cDNA、基因组DNA、蛋白质等)以预先设计的方式固定在玻片、硅片等固相载体上组成的密集分子阵列,可分为核酸芯片、蛋白芯片、芯片实验室三类.生物芯片技术的本质是生物信号的平行分析,它利用核酸分子杂交、蛋白分子亲和原理,通过荧光标记技术检测杂交或亲和与否,可迅速获得所需信息.高效、快速的生物芯片技术以其无与伦比的优势,已在医学、分子生物学等领域显现出巨大的应用价值,具有非常广阔的发展前景。

Abstract:Bio-chip is a molecular micro-array,which is composed of some biological message codes (e.g.ohgonucleotides,cDNA,genome DNA,protein,and so on) arranged on solid surfaces in light of a engineering design in advance.There are three kinds of Bio-Chips,i.e.,nucleic acid chip,protein chip,and chip “lab”.The essence of Bio-Chip technology is a parallel analysis for biology message.It is based on the principle of nucleic acid molecule hybridization or protein immunochemistry.The occurrence of hybridization/immunoreaction is detected by fluo-labelled technology.Then the needed message can quickly be obtained.Efficient and fast Bio-Chip technology has already exhibited enormous applied value in medical science and molecule biology field because of incomparable superority.Moreover,it possesses very wide development prospect.

关键词 生物芯片 核酸芯片 蛋白芯片 芯片实验室 荧光标记技术 Key words bio-chip nucleic acid chip protein chip chip “lab” fiuo- labelled technology

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