

技术与方法

染色质免疫沉淀技术在研究DNA与蛋白质相互作用中的应用

王春雨¹, 石建党¹, 朱彦², 张琚¹

1.南开大学分子生物学研究所, 教育部生物活性材料重点实验室, 天津300071;

收稿日期 2004-7-8 修回日期 2004-8-4 网络版发布日期 接受日期

摘要 在后基因组时代, DNA-蛋白质的相互作用是研究基因表达调控的一个重要领域。与其他方法相比, 染色质免疫沉淀技术 (chromatin immunoprecipitation assay, ChIP) 是一种在体内研究DNA-蛋白质相互作用的理想的方法。近年来这种方法与DNA芯片和分子克隆技术相结合, 可用于高通量的筛选已知蛋白因子的未知DNA靶点和研究反式作用因子在整个基因组上的分布情况, 这将有助于深入理解DNA-蛋白质相互作用的调控网络。总结了染色质免疫沉淀技术的方法, 特别介绍了使用这些方法取得的最新进展。

关键词 [DNA-蛋白质相互作用](#) [染色质免疫沉淀技术 \(ChIP\)](#) [DNA芯片](#) [ChIP-克隆](#)

分类号 [Q78](#)

Application of Chromatin Immunoprecipitation Assay in Deciphering DNA-Protein Interactions

WANG Chun-Yu 1, SHI Jian-Dang 1, ZHU Yan 2, ZHANG Ju 1

1.The Key Laboratory of Bioactive Materials, Ministry of Education, Institute for Molecular Biology, Nankai University, Tianjin 300071, China; 2.Laboratory of Molecular Physiology, Division of Cardiovascular Research, St. Elizabeth's Medical Center, Tufts University School of Medicine, Boston, MA 02135-2997, USA

Abstract

In the post-genomic era, identifying and characterizing various DNA-protein interactions are a major challenge in the research of gene transcriptional regulation. Although many techniques can be used for this purpose, chromatin immunoprecipitation assay (ChIP), by contrast, is ideally suited for studying DNA-protein interactions in vivo. In recent years, standard ChIP assay has been modified to uncover some known factors' unknown target sequences, especially when combined with DNA microarray and molecular cloning strategies. These high-throughput ChIP assays are more and more used to reveal the distribution profile of trans-acting factor binding sites throughout the genome, which may yield many new insights into the DNA-protein interaction network. This article summarized the methods of ChIP assay, and highlighted recent progress in the application of this technique.

Key words [DNA-protein interactions](#) [chromatin immunoprecipitation assay \(ChIP\)](#) [DNA microarray](#) [ChIP-cloning](#)

DOI:

通讯作者 张琚 zhangju@nankai.edu.cn

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(0KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“DNA-蛋白质相互作用”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [王春雨](#)
- [石建党](#)
- [朱彦](#)
- [张琚](#)