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专题研究

小鼠毒理基因芯片的可靠性验证

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摘要 背景与目的： 建立小鼠毒理基因芯片杂交检测方法，同时验证芯片数据的可靠性。 材料与方法： 采用数据的标准化处理、芯片内的参照点分析、自身比较实验以及差异分析实验方法，检验芯片数据的可靠性。 结果： 局部均值化标准化方法使数据的线性趋势更加明显；参照点分析显示芯片无非特异性杂交，芯片内部基因表达的重复性较高；自身比较实验中各个批次芯片的假阳性率在1%以下，并且无明显差异；差异分析实验中荧光交换标记方法可以减少染色误差的影响。 结论： 以上结果初步表明，所建立的基因芯片制作和检测技术能保证获得可靠性较好的数据。

关键词 基因芯片； 毒理学； 可靠性分析

The Validation of Mouse Toxicology Gene Chip Technology

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Abstract BACKGROUND & AIM： To establish the techniques of gene chip hybridization, and to verify the reliability of the gene chip data. MATERIAL AND METHODS： Several methods were applied to test the reliability of data, including data normalization treatment, analysis of reference spots, self-comparison test and differential expression experiment. RESULTS： The localized mean normalization method could be used to treat the original data effectively. There was no nonspecific hybridization in the negative control spots, and good reproducibility could be achieved among the repetitive genes in a chip. Meanwhile different batches of chips had good quality and reproducibility, and fluorescein swap labeling had advantages in reducing the staining errors. CONCLUSION： The results proved the validity of the chip hybridization and detection technology established in our lab.

Keywords gene chip toxicology analysis of reliability

DOI

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