



Genome analysis on the tupaia belangeri-derived schwann cells and olfactory ensheathing cells

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[Abstract]:Background/aim: Determining the differential genes between Schwann cells and bone marrow mesenchymal stem cells from tree shrew indicated by difference gene screening. **Methods:** SC and BMSC were isolated from tree shrew and cultured, identified by using S100 and CD44 antibody. Then total RNA of SC and BMSC was extracted, respectively. Reverse transcript reaction was performed to produce the cDNA of SC and BMSC. Next, hybridization between cDNA and RNA in chip was done by high-put technology. The fluorescent signal was compared for each gene between CS and BMSC in order to find the difference genes that include the count and the level of genes. Moreover, bioinformatics technology was used to analyze their difference, which includes biological process, cellular components, and molecular function. Moreover, the differential signal pathway was screened, also. All data are subjected to statistic analysis. **Results:** Compared with BMSC, there are 1502 up-regulated genes and 1716 down-regulated genes in SC. These up or down genes are differently involved in each biological process, cellular components, and molecular function, as well as different signal pathway. **Conclusions:** We performed the difference gene screening that determine the difference genes between SC and BMSC, which is important for their usage in regenerative medicine, base on different gene labelling.

Key words: Schwann cell; Olfactory ensheathing cell; Gene expression; Gene ontology; Signal pathway

鼯雪旺细胞和嗅鞘细胞的差异基因组分析

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[摘要]背景/目的: 通过差异基因筛选, 确定雪旺细胞与树鼯嗅鞘细胞的差异基因, 为发现更好的支持细胞提供依据。**方法:** 分离树鼯 SC 和 OEC, 用 S100 和 P25 抗体进行鉴定。然后分别提取 SC 和 OEC 的总 RNA。通过反向转录反应获得 SC 和 OEC 的 cDNA。然后, 利用高放技术在芯片中进行 cDNA 和 RNA 的杂交。比较 SC 和 OEC 各基因的荧光信号, 找出差异基因, 包括基因数目和水平。利用生物信息学技术分析了它们的生物学过程、细胞成分和分子功能等方面的差异。此外, 还筛选了差异信号通路。所有数据均进行了统计分析。**结果:** 与 OEC 相比, SC 上调基因 1502 个, 下调基因 1716 个。这些向上或向下的基因在不同的生物过程、细胞成分和分子功能以及不同的信号通路中都有不同的作用。**结论:** 我们在不同基因标记基础上进行了 SC 和 OEC 差异基因筛选, 确定了两者之间的差异基因, 这对了解它们在再生医学中的应用具有重要意义。

关键词: 雪旺细胞; 嗅鞘细胞; 基因表达; 基因本体论; 信号通路