

# **Increased Rac2 mRNA expression in peripheral blood during human corneal graft rejection**

黃曼菁

摘要

## **Abstract**

**Purpose** Allograft rejection is the main cause of graft failure in human corneal transplantation, for which underlying pathomechanism is not yet clear. We compared gene expression in the peripheral blood of patients who after undergoing corneal transplantation experienced graft rejection with those patients who accepted grafts. **Methods** Sixty-six patients who underwent corneal transplantation were studied including 18 patients who suffered subsequent graft rejection. cDNA array technology was used to survey and quantify transcript expression. A semiquantitative reverse transcriptase-PCR (RT-PCR) was used to confirm the gene expression pattern measured by a cDNA array of selected genes. **Results** Among 265 genes present on the array, eight genes were found to be differentially expressed. Four genes (Rac 2, RhoA, paxillin, and CD18) were further analysed by semiquantitative RT-PCR, and significant differences in mRNA expression levels in the rejection group were confirmed. **Conclusions** Our study demonstrated that the expression of Rac2 mRNA was upregulated in the peripheral blood of patients experiencing corneal transplantation rejection compared to those patients who had no rejection episodes. In addition, three genes, RhoA, paxillin, and CD18, showed decreased expression in rejecting patients. cDNA array technology provides a potentially useful approach to identify novel genes that might participate in pathogenic pathways during corneal graft rejection.