Behçet syndrome: The disturbed balance between anti- (CLEC12A, CLC) and pro-inflammatory (IFI27) gene expressions

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Abstract

Behçet syndrome (BS) is a chronic, multisystemic inflammatory condition with unanswered questions regarding its pathogenesis and rational therapeutics. A microarray-based comparative transcriptomic analysis was performed to elucidate the molecular mechanisms of BS and identify any potential therapeutic targets. Twenty-nine BS patients (B) and 15 age and sex-matched control subjects (C) were recruited. Patients were grouped as mucocutaneous (M), ocular (O), and vascular (V) according to their clinical phenotypes. GeneChip Human Genome U133 Plus 2.0 arrays were used for expression profiling on peripheral blood samples of the patients and the control subjects. Following documentation of the differentially expressed gene (DEG) sets, the data were further evaluated with bioinformatics analysis, visualization, and enrichment tools. Validation of the microarray data was performed using qRT-PCR. When P [?]0.05 and fold change [?]2.0 were chosen, the following numbers of DEGs were obtained; B vs. C: 28, M vs. C: 20, O vs. C: 8, V vs. C: 555, M vs. O: 6, M vs. V: 324, O vs. V: 142. Venn diagram analysis indicated only two genes, CLEC12A and IFI27, in the intersection of M vs. C and O vs. C and V vs. C. Another noteworthy gene appeared as CLC in the DEG sets. Cluster analyses successfully clustered distinct clinical phenotypes of BS. While innate immunity-related processes were enriched in the M group, adaptive immunity-specific processes were significantly enriched in the O and V groups. Distinct clinical phenotypes of BS patients displayed distinct expression profiles. In Turkish BS patients, expression differences regarding the genes CLEC12A, IFI27, and CLC seemed to be operative in the disease pathogenesis. Based on these findings, future research should consider the immunogenetic heterogeneity of BS clinical phenotypes. Two anti-inflammatory genes, namely CLEC12A and CLC, may be valuable as therapeutic targets and may also help design an experimental model in BS.

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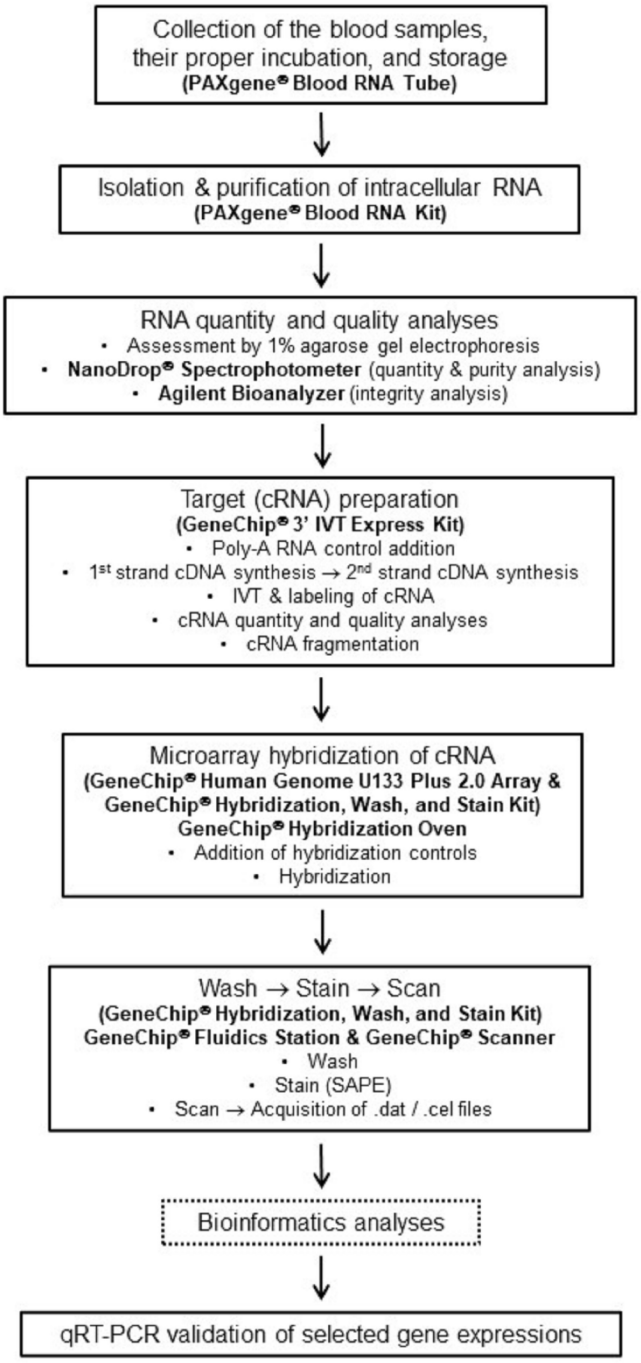

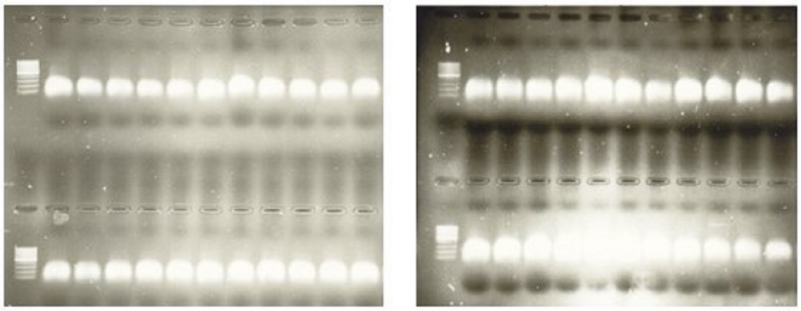

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