Krüppel-like Factor 4 modulates interleukin-6 release in human dendritic cells after *in vitro* stimulation with *Aspergillus fumigatus* and *Candida albicans*

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Details



Abstract

Invasive fungal infections are associated with high mortality rates and are mostly caused by the opportunistic fungi *Aspergillus fumigatus* and *Candida albicans*. Immune responses against these fungi are still not fully understood. Dendritic cells (DCs) are crucial players in initiating innate and adaptive immune responses against fungal infections. The immunomodulatory effects of fungi were compared to the bacterial stimulus LPS to determine key players in the immune response to fungal infections. A genome wide study of the gene regulation of human monocyte-derived dendritic cells (DCs) confronted with *A. fumigatus, C. albicans* or LPS was performed and *Krüppel-like factor 4 (KLF4)* was identified as the only transcription factor that was down-regulated in DCs by both fungi but induced by stimulation with LPS. Downstream analysis demonstrated the influence of KLF4 on the interleukine-6 expression in human DCs. Furthermore, KLF4 regulation

was shown to be dependent on pattern recognition receptor ligation. Therefore KLF4 was identified as a controlling element in the IL-6 immune response with a unique expression pattern comparing fungal and LPS stimulation.

Involved units

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Topics

Networks of host- fungal pathogen interaction

Identifier

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