

IMPACT OF TRANSCRIPTION FACTORS ON DENDRITIC CELL DEVELOPMENT

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Dendritic cells (DC) are critical immune modulators. In the presented work, the author investigated the roles of genes, which might be involved in the development of classical DC (cDCs) and plasmacytoid DC (pDCs), using an immortalized hematopoietic stem and progenitor cell (iHSPC) line. The iHSPCs were first subjected to transduction with a lentivirus carrying shRNA in order to knockdown the following genes: IRF7, ETS1, PHF17 and Zfp719. The stable knockdown iHSPC cell lines were then cultured *in vitro* for 5 days with Flt3 ligand, a cytokine required for DC development, and analyzed with flow cytometry. The flow cytometry results and cell counts showed a strong impact of each of the genes on the survival and development of cDCs and pDCs, compared to shLacZ, a knockdown control. Normally highly expressed in pDCs, the

genes proved to be crucial for their development – with the strongest effect observed for IRF7 knockdown. These results give a new insight into the DC biology and shows possible footholds for influencing their functions. This approach may prove useful in designing vaccines, fighting infections and paving the way for new strategies for immunotherapy in cancer.

Biography

Krzysztof Olesiejuk is a Medical Student from Medical University of Lodz, Poland. Having already taken part in research on three continents, he is engaged in scientific fields such as immunology, cancer biology and multi-drug-resistance of bacteria. Apart from this, his interests include wound healing processes and neural interfaces.

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