Optimization of Dendritic cells purification from mouse spleen A recommended method for purification of Dendritic cells from reproductive organs

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Abstract

Dendritic cells (DC) are the principal antigen-presenting cells (APC) responsible for induction of primary immune responses by T lymphocytes. Although DCs are present in most lymphoid tissues, they occur in very low frequency accounting for 0.5% or less of nucleated cells in peripheral lymphoid organs. In the present study, we report the purification of DCs from mouse spleen with high yield and purity using a three-step purification technique including: collagenase digestion of tissue, selection of low-density cells using Optiprep density gradient medium and plastic adherence. By using techniques outlined above, we obtained 5-7×10^7 DC/spleen with purity≥ of 97%. Such large numbers of purified DCs enables us to further document their different characteristics including morphology, immunophenotype and to evaluation of their role in immune system. Finally, since DCs have been reported to be present in all reproductive organs, we suggest that this protocol be used for isolation and purification of DCs from those organs for further in vitro studies.

Keywords: Dendritic cells, Spleen, Purification, and Density gradient centrifugation.

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