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Review article

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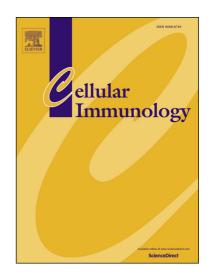
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The multifaceted role of the renal mononuclear phagocyte system

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<u>Abstract</u>

The kidney contains an abundant and complex network of mononuclear phagocytes, which includes dendritic cells (DCs) and macrophages (MØs). The distinction between these cell types is traditionally based on the expression of molecular markers and morphology. However, several classification systems are used in parallel to identify DCs and MØs, leading to considerable uncertainty about their functional roles. The discovery that a substantial proportion of macrophages in tissues like the kidney are embryonically derived further complicates the situation. Recent studies have used newly identified transcription factors such as ZBTB46 and lineage tracing techniques for classifying mononuclear phagocytes. These approaches have shed new light on the functional specialization of these cells in health and disease, uncovered an influence of the renal microenvironment and revealed considerable cellular plasticity, especially in inflammatory situations. In this review, the current knowledge about the developmental origins and versatile functional roles of DCs and MØs in kidney homeostasis and disease is discussed.

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