Hydroxychloroquine regulating T cell response by modulating dendritic cell function

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Hydroxychloroquine (HCQ) is an antimalarial drug that has been used for treating a large variety of diseases for many years. However, its specific mechanism is still not well demonstrated. In this study, we investigated the effects of HCQ on regulating dendritic cells (DC) function. The surface molecule expression, secretion of inflammatory cytokines and ability in promoting naïve CD4+ T cells proliferation and differentiation of bone marrow-derived DCs (BMDCs) were investigated after HCQ treatment. We found that HCQ treatment could significantly reduce the expression level of MHC II, CD86 and CD40. HCQ could also inhibit the production of cytokines including IL-1β, IL-6, IL-23 and TNF-α by LPS (Lipopolysaccharide) stimulated DC. Additionally, the ability of DC in promoting naïve CD4+ T cells proliferation and Th17 cells differentiation was decreased by HCQ. The effect of HCQ on DC may be partly associated to inhibition of phosphorylation of ERK1/2 and p38 MAP kinase proteins. These findings provided new understanding about the mechanism of HCQ in immune regulation.

Recent Publications


Biography

Yuan Liu has her expertise in research of pathogenesis mechanism of autoimmune diseases and using proteomic approaches to identify biomarkers in autoimmune diseases.

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