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Expression of Interferon-Lambda Receptor-(IFN-λRα) in Mononuclear Phagocyte Cells (MPCs) Is Influenced by the Levels of Newly Discovered Type III IFN-λ4 in Vitro

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Abstract : IFNλR1 and IL10R2 collectively construct a heterodimer, which is an acknowledged functional receptor for all type III interferons (IFNs). Expression of IFNλR1 is highly tissue specific, which can help in making type III IFNs a drug of choice as comparable to its analogue, type I IFNs, for treating hepatitis C in the near future. Although, expression of IFNλR1 also varies with the concentration of type I IFNs, but in this study it was shown that the expression of IFNλR1 varies with the protein titers of IFN-α, IFN-λ3 and the newly discovered IFN-λ4. High dosage of IFN-α reduces the expression of IFNλR1 in HepG2 cells, which can affect the antiviral activity of type III IFNs in vivo. We premeditated an experimental strategy to differentiate monocytes into dendritic cells (DCs), type I and type II macrophages in vitro and quantified the expression of the IFNλR1 by qPCR. The exposure of newly discovered IFN-λ4 to macrophages and DCs also raised the expression of its own receptor, which shows that expression of IFN-λ4 protein in hepatitis C patient may augment type I treatment and help ease off viral titers. The results of this study may contribute in some understanding towards the mechanisms involved in the selective expression of IFNLR1 and exceptionalities associated with the receptor.

Keywords : IFNLR1, Interferon Lambda 4 (IFN-λ4), Mononuclear Phagocyte Cells (MPCs), expression
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