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New challenges for IFN therapy

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IFN-α is widely used in clinic for the treatment of viral infection and cancer. However, its use remains problematic for two main reasons: 1) low efficacy and 2) numerous and significant side effects. With the discovery of IFN-λ, new challenges for the IFN therapy are expected in the future. Although IFN-λ and classical IFN-α utilize distinct receptor complexes for signaling, both types of IFNs activate similar intracellular signaling pathways and biological activities, including the ability to induce antiviral state in cells. However, in contrast to IFN-α, the response to IFN-λ is highly cell-type specific. Only epithelial cells and to a lesser extent some immune cells respond to IFN-λ. This particular pattern of response is controlled by the differential expression of the IFN-λ receptor, which, in contrast to IFN-α, should result in limited side effects in patients. Recently, we have demonstrated that both IFN-λ and IFN-α exert comparable antitumor activity. However their antitumor mechanisms were distinct. Interestingly, when IFN-λ and IFN-α are combined, significant improvement of the antitumor effect was observed. Therefore, the use of a new IFN therapy, based on the combination of IFN-α and IFN-λ may help overcome the main obstacles of the current IFN therapy.

Biography

Ahmed Lasfar has completed his Ph.D. in Immunology from Paris University and Pasteur Institute and postdoctoral studies from University of Medicine and Dentistry of New Jersey. He is assistant Professor at Rutgers University. He has published more than 20 papers and book chapters in the field of interferon. He is serving as an editorial board member for numerous journals.

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