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| Nota di contenuto       | The Interferons; Contents; Preface; List of Contributors; Color Plates; Section A Molecular Aspects, Introduction and Purification; 1 Type I Interferons: Genetics and Structure; 1.1 Introduction; 1.2 The Type I IFN Genetic Locus; 1.3 Type I IFN Genes; 1.3.1 IFN-; 1.3.2 IFN-; 1.3.3 IFN-; 1.3.4 IFN-; 1.3.5 IFN-; 1.3.6 IFN- (Limitin); 1.3.7 IFN-; 1.3.8 IFN-; 1.3.9 IFN-; 1.4 Type I IFN Gene-regulatory Regions; 1.5 Evolution of the Type I IFNs; 1.5.1 Vertebrate IFN Genes; 1.5.2 The Expansion and Divergence of the IFN Genes; 1.6 Natural and Induced Mutations in IFN Genes<br>1.7 Secondary Structural Features of Type I IFNs<br>1.7.1 Conserved Amino Acid Residues; 1.7.2 Post-translational Modifications of Type I IFNs; 1.7.3 Conserved Cysteine Residues and Disulfide Bond Formation; 1.8 The Structure of Type I IFNs; References; 2 Activation of Interferon Gene Expression Through Toll-like Receptor-dependent and -independent Pathways; 2.1 Introduction; 2.2 IFN- Gene Transcription; 2.3 IRF Family Members; 2.4 Role of IRFs in Virus-mediated IFN Activation; 2.4.1 IRF-3; 2.4.2 IRF-5; 2.4.3 IRF-7; 2.5 IFN Signaling Pathways; 2.5.1 TLR-dependent Signaling to IFN Activation |

2.5.1.1 TLR Overview; 2.5.1.2 TLR-3 Signaling; 2.5.1.3 TLR-4 Signaling; 2.5.1.4 TLR-7 Signaling; 2.5.1.5 TLR-9 Signaling; 2.5.2 TLR-independent Signaling; 2.5.2.1 Retinoic Acid Inducible Gene (RIG)-I Signaling; 2.5.2.2 Melanoma Differentiation-associated Gene-5 (mda-5); 2.6 Conclusions; References; 3 Interferon Proteins: Structure, Production and Purification; 3.1 Introduction; 3.2 The Structure of Type I IFNs; 3.3 Production and Purification of Type I IFNs; 3.3.1 Leukocyte-derived IFN - First Steps in Producing Commercial IFN; 3.3.2 Lymphoblastoid IFN - Towards more Reliable Supplies of IFN; 3.3.3 Cloned Type I IFNs - An Inexhaustible Supply of Therapeutic Material; 3.4 Long-acting IFNs; 3.5 Summary; References; 4 Interferon-: Gene and Protein Structure, Transcription Regulation, and Actions; 4.1 Introduction; 4.2 IFN- Gene Structure and Regulation; 4.2.1 Transcriptional Regulation; 4.2.2 Epigenetic Regulation; 4.2.3 Post-transcriptional Regulation; 4.3 IFN- Signal Transduction; 4.3.1 The JAK-STAT Signaling Pathway; 4.3.2 Activation of Alternate Signaling Pathways; 4.3.3 Regulation of IFN- Signaling; 4.4 IFN- in T(h) Cell Development; 4.4.1 Signaling Pathways Involved in T Cell Development; 4.5 IFN- and DCs; 4.5.1 IFN- and T Cell-DC Crosstalk; 4.5.2 Signals through Toll-like Receptors (TLRs) Activate DCs and Influence IFN- Expression; 4.6 IFN- - Role in Tumor Development and Growth; 4.6.1 IFN- in Tumor Growth and Survival; 4.6.2 Inhibition of Angiogenesis by IFN-; 4.6.3 Role of IFN- in Promoting Immune Responses against Tumors; 4.7 Summary; References; 5 Interferon and Related Receptors; 5.1 Introduction; 5.2 IFNs and IFN-like Molecules in Brief; 5.3 The Receptors; 5.3.1 Receptor Nomenclature; 5.4 The Type I IFN Receptor

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## Sommario/riassunto

At long last, the first book to cover all important areas of interferon science in one volume. Top scientists, including many pioneers in the field, highlight the role of interferons as research tools and as therapeutic agents in clinical applications. Edited by an experienced interferonologist, chapters include discussions of interferon genes, Type I, II and III IFNs, as well as their induction, production and purification, receptors actions, measuring IFN activities and anti-IFN antibodies, as well as the evolution of viral defense mechanisms. For immunologists, cancer researchers, medic

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