1. Record Nr. UNINA9910461143403321 Bone morphogenic protein / / series editor Gerald Litwack, PhD, Toluca **Titolo** Lake, North Hollywood, California Pubbl/distr/stampa Waltham, MA:,: Elsevier,, 2015 **ISBN** 0-12-802592-1 Edizione [First edition.] 1 online resource (367 p.) Descrizione fisica Vitamins and Hormones, , 0083-6729; ; volume 99 Collana Disciplina 612.75 Soggetti Bone morphogenetic proteins Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia

Note generali Description based upon print version of record.

Nota di bibliografia Includes bibliographical references and index.

Nota di contenuto

Front Cover; Bone Morphogenic Protein; Copyright; Former Editors; Contents; Contributors; Preface; Chapter One: Mechanisms of BMP-Receptor Interaction and Activation; 1. Evolutionary Expansion and Diversification of the Transforming Growth Factor Superfamily; 2. Phylogenetic Analysis Reveals Four Functional Subfamilies for TGF Ligands; 3. Expression as Protease-Activated Proproteins and a Cystine-Knot Motif in the C-Terminal Mature Region as Key Features ...: 4. TGF Receptor Activation and Its Downstream Signaling Cascade; 5. Too Few Receptors for Too Many Ligands Lead to Promiscuity 6. Molecular Mechanisms to Ensure Ligand-Receptor Promiscuity and Specificity: The Concept of Multiple Hot Spots of Binding7. Molecular Mechanisms to Ensure Ligand-Receptor Promiscuity and Specificity: The Concept of Structural Adaptability: 8. Consequences of Promiscuity and Specificity in the TGF Superfamily: Conclusions; References; Chapter Two: The Bone Morphogenetic Proteins and Their Antagonists; 1. Bone Morphogenetic Proteins; 2. BMP Antagonist Proteins; 2.1. Chordin Family; 2.2. Follistatin and Follistatin-Like Proteins; 2.3. Noggin; 2.4. Twisted Gastrulation

3. Cerberus and Dan Family BMP Antagonists3.1. Cerberus; 3.2. Coco; 3.3. Dan; 3.4. Gremlin; 3.5. PRDC/Gremlin 2; 3.6. Sclerostin; 3.7. USAG-1/Wise; 4. BMP-Antagonists Binding to Heparin/HS; References; Chapter Three: BMP-7 Signaling and its Critical Roles in Kidney Development, the Responses to Renal Injury, and Chronic K ...; 1.

Introduction; 2. The TGF-/BMP Protein Superfamily; 3. The BMP-7 Protein: 4. TGF-/BMP Signaling Pathways: 4.1. SMAD-Dependent Mechanisms for TGF-/BMP Signaling; 4.1.1. Ligand Binding and Receptor Activation; 4.1.2. Activation of SMAD Transcription Factors 4.1.3. Heterodimerization and Nuclear Translocation of SMAD Transcription Factors 4.1.4. SMAD-Dependent Regulation of Transcription; 4.2. SMAD-Independent Mechanisms for TGF-/BMP Signaling; 4.3. Key Regulatory Steps in TGF-/BMP Signaling; 4.3.1. Ligand Expression: 4.3.2. Ligand Availability: 4.3.3. Receptor Activation; 4.3.4. SMAD Activation; 4.3.5. Formation of Transcription Factor Complexes; 5. The Role of BMP-7 in Kidney Development; 5.1. Effects of BMP-7 Genetic Ablation on Development; 5.2. Functions of BMP-7 in the Metanephric Mesenchyme; 5.3. Functions of BMP-7 in the Ureteric Bud 5.4. Functions of BMP-7 in Stromal Cell Populations6. BMP-7. Congenital Renal Abnormalities, and Pediatric Kidney Disease; 7. The Role of BMP-7 in the Pathogenesis of CKD; 7.1. Therapeutic Effects of Recombinant BMP-7 in Models of CKD; 7.2. Renal Protective Mechanisms of Recombinant BMP-7; 7.2.1. Inhibition of Renal Fibrosis; 7.2.2. Other Important Renal Protective Mechanisms; 8. A Model for the Role of Endogenous BMP-7 in Regulating the Responses to Renal Injury: 9. Clinical Implications for BMP-7 in Patients with CKD:

Chapter Four: The Role of BMP Signaling and NF-B Signaling on Osteoblastic Differentiation, Cancer Development, and Vasc...

Acknowledgments; References