

| | |
|-------------------------|---|
| 1. Record Nr. | UNINA9910437615503321 |
| Titolo | Glioma signaling // Jolanta Baranska, editor |
| Pubbl/distr/stampa | Dordrecht, : Springer, 2012, c2013 |
| ISBN | 9786613923936 9781283611480 1283611481 9789400747197 9400747195 |
| Edizione | [1st ed. 2013.] |
| Descrizione fisica | 1 online resource (232 p.) |
| Collana | Advances in experimental medicine and biology, , 0065-2598 ; ; v. 986 |
| Altri autori (Persone) | BaranskaJolanta <1969-> |
| Disciplina | 571.6 |
| Soggetti | Gliomas Cell receptors Cellular signal transduction Brain - Tumors |
| 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 | Glioma Signaling; Preface; Contents; Contributors; Chapter 1: Introduction to Purinergic Signalling in the Brain; 1.1 Introduction; 1.2 Purinergic Signalling in the CNS; 1.2.1 Cotransmission; 1.2.2 Glial Cells; 1.2.3 Neuron-Glial Interactions; 1.3 Purinergic Signalling in Normal Behaviour; 1.4 Purinergic Pathophysiology in the CNS, Including Gliomas; References; Chapter 2: Adenosine Signaling in Glioma Cells; 2.1 Introduction; 2.2 Adenosine Metabolism and P1 Adenosine Receptors; 2.3 A Role for Ecto-5' -Nucleotidases CD39 and CD73 in Gliomas? 2.4 Receptor-Mediated Effects of Adenosine on Glioma Cell Growth and Survival2.4.1 A 1AR-, A 2A AR-, and A 2B AR-Mediated Effects on Glioma Cells; 2.4.2 The A 3 Receptor Subtype as a New Pharmacological Target for Innovative Chemotherapeutic Approaches to Gliomas; 2.5 Receptor-Independent Effects of Adenosine Analogues in Glioma Cell Growth and Survival; 2.6 Conclusions and Future Perspectives; References; Chapter 3: Cross-Talk in Nucleotide Signaling in Glioma C6 Cells; 3.1 Introduction; 3.2 Properties of P2 Receptors; 3.2.1 P2X |

Receptors; 3.2.2 P2Y Receptors

3.3 P2Y 1 , P2Y 2 and P2Y 12 Receptor Expression and Functionality in Glioma C6 Cells
3.4 Serum Withdrawal; 3.4.1 Effect on P2Y 1 and P2Y 12 Receptor Expression; 3.4.2 Effect on C6 Cell Morphology, Growth and Differentiation; 3.4.3 Effect on the P2Y 14 Receptor; 3.5 Cyclic AMP Effect on Cell Proliferation, Growth and Differentiation; 3.6 Effect of Extracellular Nucleotides on ERK1/2 and PI3K/Akt Activity: P2Y 1 / P2Y 12 Cross-Talk; 3.7 The P2X 7 Receptor; 3.8 Concluding Remarks; References; Chapter 4: Calcium Signaling in Glioma Cells - The Role of Nucleotide Receptors

4.1 Origin of the Calcium Signaling
4.2 Sources of the Calcium Signal;
4.2.1 Extracellular Calcium Signal; 4.2.2 Signal Generated by Calcium Stores; 4.2.2.1 Store-Operated Calcium Signaling; 4.2.2.2 Calcium-Induced Calcium Signaling; 4.3 Calcium Signaling in Non-Excitable Glial Cells; 4.3.1 Astrocytes; 4.3.2 Microglia; 4.4 Nucleotide Receptor-Evoked Calcium Signaling in Glial Cells; 4.5 Glioma C6: A Case Study; 4.5.1 The Nature of the Signal - The Role of Nucleotide Receptors in Glioma C6 Cells; 4.6 Gliomas: The Motile Tumors, Calcium Signaling and Chemotaxis

4.6.1 The Calcium Signal in Glioma C6 Is Strongly Dependent on Actin Cytoskeleton
4.7 Concluding Remarks; References; Chapter 5: Purinergic Signaling in Glioma Progression; 5.1 Introduction; 5.1.1 Molecular and Cellular Origins of Gliomas; 5.1.2 Glioma Cancer Stem Cells (CSCs); 5.1.3 Tumor Microenvironment - Key for Understanding and Targeting Gliomas; 5.2 Purinergic Signaling in Gliomas; 5.3 Ectonucleotidases; 5.3.1 Ectonucleoside Triphosphate Diphosphohydrolases (E-NTPDases); 5.3.2 Ectonucleotide Pyrophosphatase/Phosphodiesterases (E-NPPs); 5.3.3 Ecto-Alkaline Phosphatases (ALP)
5.3.4 Ecto-5' -Nucleotidase (Ecto-5' -NT/CD73)

Sommario/riassunto

Gliomas, developing in the brain from the transformed glial cells, are a very special kind of tumors, extremely refractory to conventional treatments. Therefore, for the development of new antitumor strategies, a better understanding of molecular mechanisms responsible for their biology, growth and invasion is still needed. Glioma Signaling is a text reference on cellular signaling processes regulating gliomas physiology and invasiveness. The first half of the book is focused on the mechanism of nucleotide receptor activation by exogenous nucleotides. The remaining chapters deal with the formation of complex signaling cascades, including cytoplasmic transcription factors, induced by growth factors, cytokines and cannabinoids. The book provides a framework explaining how signal transduction elements may modulate glioma cytoskeleton structure, cytoplasmic calcium concentration, cellular growth, progression and invasion, as well as presents perspectives concerning potential targets for glioma therapy.
