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Nota di contenuto	Preface -- Tumor microenvironment a job of several holders -- Tumor microenvironment- a selective pressure boosting cancer -- Lactate and lactate transporters as key players in the maintenance of the Warburg effect -- Section 1. Adaptive metabolic features are sustained by tumor microenvironment -- Recycling the interspecific relations with epithelial cells: bacteria and cancer metabolic symbiosis -- Gut microbiota and cancer of the host: colliding interests -- Metabolic plasticity of tumor cells: how they do adapt to food deprivation -- Multifaceted oncogenic role of adipocytes in the tumour microenvironment -- Endothelial cells (ECs) metabolism a valuable piece to disentangle cancer biology -- Monocytes and macrophages in cancer: unsuspected roles -- Section 2. Microenvironment and metabolic signalling- the way cancer cells know

how to survive.-: Wnt signaling: paths for cancer progression -- Microenvironment driven metabolic adaptation in melanoma -- Metabolic reprogramming and signaling to chromatin modifications in tumorigenesis -- Inflammatory microenvironment modulation of alternative splicing in cancer: a way to adapt -- The bone marrow niche - the tumor microenvironment that ensures leukemia progression -- Section 3. Metabolic fitness and therapy response in cancer -- Exploiting cancer cells metabolic adaptability to enhance therapy response in cancer -- The metabolic remodelling in lung cancer and its putative consequence in therapy response -- Hydrogen sulfide metabolism and signaling in the tumor microenvironment -- Using metabolic adaptation to design new drugs -- Metabolomics- a new way of screening cancer -- NMR as a tool for metabolomics -- Section 5. Animal models- addressing cancer microenvironment -- Animal models to study cancer and its microenvironment -- Modulating the metabolic phenotype of cancer microenvironment -- Modeling of Solid-tumor Microenvironment in Zebrafish (Danio Rerio) Larvae -- Section 6. In vitro and ex vivo cancer models -- In vitro and ex vivo models- the tumor microenvironment in a flask -- Index.

Sommario/riassunto

This book will allow readers to discover the crucial role of tumor microenvironment (TME) in the selection of cancer cells that are more prone to carry on cancer initiation and progression. The metabolic remodeling, as the basis of life overall, allows the adaptive establishment of a tumor in a certain TME, which in turn presents a variety of selective pressures. Coupled with the late diagnosis, the poor therapy response are the main hurdles limiting oncological disease control and eventual cure. Thus the metabolic plasticity of cancer cells often underlies chemoresistance. This edited work presents an exhaustive description and comprehensive view of cancer metabolism as a weapon used by cancer cells to adapt to TME. TME and the organ microenvironment is analyzed as a whole, considering cancer cells, stromal cells and microbiota. This complex circuit is observed as the support for disease development and therapy evasion but also as a valuable kernel, presenting new players to be targeted in a more precise cancer therapy. The various threads of cancer biology related to TME and metabolic adaptation will be addressed including: 1) key players in the metabolic network; 2) the way adaptive metabolic features are sustained by TME; 3) TME and metabolic signaling, accounting for cancer cells survival; 4) metabolic fitness driven limitations in therapy response, and 5) the way TME and cancer metabolism can be helpful in the design of new drugs. In addition, the usefulness, technical strengths and weaknesses of analytical techniques useful in cancer metabolomics will be presented in an integrative way. Moreover, the use of innovative and traditional in vitro and in vivo cancer models, as powerful tools to address the influence of TME in cancer progression and metabolic reprogramming will be also presented. This work was written by experts and dedicated to researchers with interests in cancer biology, TME, cancer metabolism and therapy. It will interest the Advances in Experimental Medicine and Biology readership, including basic researchers, analytic researchers, bio-engineers and clinicians.
