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Sommario/riassunto

The number of males diagnosed with prostate cancer (PCa) is increasing all over the world. Most patients with early-stage PCa can be treated with appropriate therapy, such as radical prostatectomy or irradiation. On the other hand, androgen deprivation therapy (ADT) is the standard systemic therapy given to patients with advanced PCa. ADT induces temporary remission, but the majority of patients (approximately 60%) eventually progress to castration-resistant prostate cancer (CRPC), which is associated with a high mortality rate. Generally, well-differentiated PCa cells are androgen dependent, i.e., androgen receptor (AR) signalling regulates cell cycle and differentiation. The loss of AR signalling after ADT triggers androgen-independent outgrowth, generating poorly differentiated, uncontrollable PCa cells. Once PCa cells lose their sensitivity to ADT, effective therapies are limited. In the last few years, however, several new options for the treatment of CRPC have been approved, e.g., the CYP17 inhibitor, the AR antagonist, and the taxane. Despite this progress in the development of new drugs, there is a high medical need for optimizing the sequence and combination of approved drugs. Thus, the identification of predictive biomarkers may help in the context of personalized medicine to guide treatment decisions, improve clinical outcomes, and prevent unnecessary side effects. In this Special Issue Book, we focused on the cytobiology of human PCa cells and its clinical

applications to develop a major step towards personalized medicine matched to the individual needs of patients with early-stage and advanced PCa and CRPC. We hope that this Special Issue Book attracts the attention of readers with expertise and interest in the cytobiology of PCa cells.