

Preface

If you know the enemy and know yourself you need not fear the results of a hundred battles.

Sun Tzu

Every year millions of people experience a life-changing event of having been diagnosed with cancer and start an often tragic battle. Those of us who are privileged enough to enter this battle willingly and fight at the frontiers of science will soon learn the fatiguing complexities of the opponent's strategies, its unsurpassed resilience and unimaginable diversity of the molecular arsenals. This onslaught can hopefully be matched by a power of our collective knowledge. The idea of this book originated on the grounds of this philosophy, and was conceived in order to summarize vast knowledge accumulated in relation to translation and its regulation in cancer biology and medicine.

It is well established that dysregulated protein synthesis or activity is a cornerstone of a neoplastic process. A central dogma of molecular biology states that the protein biosynthetic pathway, with some exceptions, follows the three major events: replication (DNA to DNA), transcription (DNA to RNA) and translation (RNA to protein). Hence, the abnormal functioning of any of these processes can nurture cellular transformation to malignant growth.

While other pillars of the central dogma were front-page in cancer research, translation remained underground for decades. In fact, even in specialized minds of some outstanding cancer researchers and clinicians, the word *translation* appears to associate more often with a bench-to-bedside experience or a linguistic phenomenon. Hence, alongside with the aforementioned, one of the objectives of this book is to proselytize among current and future scholars and students the fundamental importance of translation in cancer development and progression, and enable them to explore new battlegrounds and thus build new anticancer weaponry.

Translation and Its Regulation in Cancer Biology and
Medicine

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