

An oncogene is a gene that has the potential to cause cancer. In tumor cells, these genes are often mutated, or expressed at high levels. Most normal cells will undergo a programmed form of rapid cell death (apoptosis) when critical functions are altered and malfunctioning. Activated oncogenes can cause those cells designated for apoptosis to survive and proliferate instead. Most oncogenes began as proto-oncogenes: normal genes involved in cell growth and proliferation or inhibition of apoptosis. If, through mutation, normal genes promoting cellular growth are up-regulated (gain-of-function mutation), they will predispose the cell to cancer; thus, they are termed "oncogenes". Usually multiple oncogenes, along with mutated apoptotic or tumor suppressor genes will all act in concert to cause cancer. Since the 1970s, dozens of oncogenes have been identified in human cancer. Many cancer drugs target the proteins encoded by oncogenes.¹

In the present book, fifteen typical literatures about oncogene published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on oncogene. We hope this book can demonstrate advances in oncogene as well as give references to the researchers, students and other related people.

¹ <https://en.wikipedia.org/wiki/Oncogene>