Novel Anticancer Drug Protocols (Methods In Molecular Medicine)
We are in an exciting era in the war against cancer, with real prospects for novel anticancer drugs that are cancer cell-specific without the toxicities that have been the hallmark of conventional cytotoxic cancer chemotherapy. Advances in cancer cell biology fueled by the molecular biology revolution have resulted in the uncovering of many novel potential molecular targets for cancer therapy. New anticancer drug discovery and development is now largely focused on exploiting these new molecular targets, which encompass oncogenes, tumor suppressor genes, and their gene products, as well as targets involved in tumor angiogenesis, metastasis, survival, and longevity mechanisms. Exploitation of some of these targets has already yielded fruits and introduced new paradigms of molecularly targeted cancer therapy into the clinic, namely, protein kinase inhibition by antibodies or small molecules, exemplified by Herceptin® (trastuzumab), a humanized antibody targeted against the HER-2 growth factor receptor tyrosine kinase for the treatment of metastatic breast cancer; and Gleevec, a small molecule bcr-abl kinase inhibitor for the treatment of chronic myelogenous leukemia.