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The DNA Damage Response: Implications on Cancer Formation and Treatment

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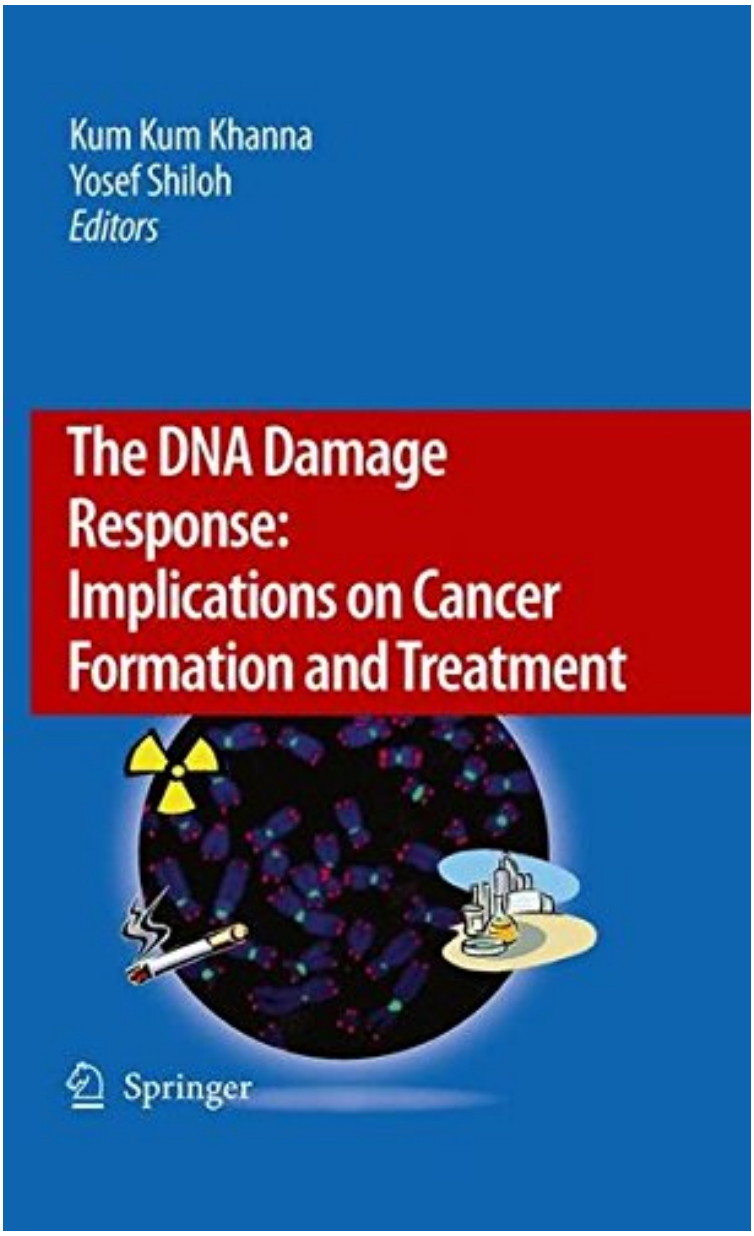

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From Springer : The DNA Damage Response: Implications on Cancer Formation and Treatment before purchasing it in order to gage whether or not it would be worth my time, and all praised The DNA Damage Response:

Implications on Cancer Formation and Treatment:

The ?eld of cellular responses to DNA damage has attained widespread recognition and interest in recent years commensurate with its fundamental role in the ma- tenance of genomic stability. These responses, which are essential to preventing cellular death or malignant transformation, are organized into a sophisticated s- tem designated the DNA damage response. This system operates in all living organisms to maintain genomic stability in the face of constant attacks on the DNA from a variety of endogenous by-products of normal metabolism, as well as exogenous agents such as radiation and toxic chemicals in the environment. The response repairs DNA damage via an intricate cellular signal transduction network that coordinates with various processes such as regulation of DNA replication, tr- scriptional responses, and temporary cell cycle arrest to allow the repair to take place. Defects in this system result in severe genetic disorders involving tissue degeneration, sensitivity to speci?c damaging agents, immunode?ciency, genomic instability, cancer predisposition and premature aging. The ?nding that many of the crucial players involved in DNA damage response are structurally and functionally conserved in different species spurred discoveries of new players through similar analyses in yeast and mammals. We now understand the chain of events that leads to instantaneous activation of the massive cellular responses to DNA lesions. This book summarizes several new concepts in this rapidly evolving ?eld, and the advances in our understanding of the complex network of processes that respond to DNA damage.

From the Back CoverThe book The DNA Damage Response: Implications on Cancer Formation and Treatment brings together a great collection of review articles. The articles have beenwritten by a group ofexperts who have a deep knowledge of the recent advances in the fields of DNA damage signalling and repair and their implications in carcinogenesis. The book is divided into chapters that deal with the elaborate surveillance system and repair mechanisms used by cells to suppress mutagenic lesions to avoid cancer. It provides snapshots of:* current understanding of DNA damage signalling, * cell cycle checkpoints, * some of the major DNA repair pathways, * functional links between DNA damage, * genomic instability and cancer, * implications of DNA damage for the development of new treatment modalities for cancer.