

Understanding of the molecular basis of DNA damage and its repair has increased dramatically in recent years, and substantial knowledge now exists concerning the products arising from free-radical attack on DNA. Free-radical DNA damage may lead to mutations, cancer, and cell death. Free radicals have various sources, notably ionizing radiation and oxidative stress. In radiotherapy for cancer and with some anticancer drugs, use is made of cell death by excessive DNA damage. The mechanisms leading to products of free-radical attack which have been studied in models and with small double-stranded DNA fragments are discussed in detail, and the basics of the underlying free-radical chemistry are dealt with in separate chapters.

ISBN 3-540-26120-6



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