Editorial

Cause and Prevention of Human Cancer

The relative contribution of the environment, genetic susceptibility and DNA replication errors to cancer causation has been a longstanding area of investigation in the fields of molecular epidemiology of cancer and carcinogenesis. A recent report by Tomasetti et al. (1) attributing DNA replication errors within stem cells and ‘bad luck’ as a major cause of a select group of cancers has stirred debate within community of cancer researchers especially those in cancer prevention (2–7). Tomasetti et al. (8) have also written a balanced response to many of these concerns.

Carcinogenesis is joining this debate by publishing in this issue a series of reviews on the carcinogenic potential of exposure to low doses and mixtures of chemicals. The reviews utilize a framework of the Hallmarks of Cancer (9) and are the product of the Halifax Project Task Force initiated by Leroy Lowe and Michael Gilbertson. They engaged international teams with input of nearly 200 cancer biologists and toxicologists to review the literature in each of the 11 Hallmarks of Cancer. The reviews are multiauthored, condensed by a peer review and extensively referenced. The primary recommendation is a research and regulatory strategy using the Hallmarks of Cancer framework to identify priority mixtures of chemicals, i.e. ‘…those with substantial carcinogenic relevance’, for future investigations ‘… to inform risk assessment practices worldwide’ (10).

Carcinogenesis will also publish a review of cancer prevention this summer, which will be written by Christopher Wild, Director of the International Agency on Research of Cancer.

References


Curtis C Harris,
Editor-in-Chief