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The magnitude of the occupational cancers; what is the best therapy?

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Nearly 20 percent of all cancers are the result of exposures at work. Among hundreds of thousands of chemicals that are used in workplaces worldwide, unfortunately 96% of them haven't been thoroughly tested for health risks. Tens of thousands of workers generally have to die before scientific studies identify a workplace cancer problem. That means there is an expanded field to research on occupational cancers or carcinogens in collaboration with other groups. In an Iranian national report by ministry of health, skin cancers are the most common occupational cancers & occupational & environmental carcinogens are responsible for about 152000 deaths in a year. Our Strategy for occupational cancer therapy has made a public stand in favor of Primary Prevention. These strategies include: Improved surveillance program; community & worker education and action; industry reductions in carcinogen use; better information disclosure and labeling; and government intervention in the form of new regulations and policy. If all carcinogen use in the workplace stopped today, there would still be a working generation and hundreds of thousands of retired workers that have already faced some level of risk. For this reason, we are also arguing for more effective recording of exposures, better recognition & therapy of the link between work and health. So we also need secondary and tertiary prevention.

Biography

M Aghilinejad is Associate Professor & has studied Occupational Medicine for 16+ years, during which time he has authored 5 books & published more than 30 articles in internal & external journals. He has served on the editorial boards for the Occupational Medicine, *Journal of Occupational Health*, and the *Journal of medical science (Razi)*. He is Senior Editor for *Tanaffos*. He is a member of the Scientific Advisory Committees for the Occupational Medicine and the Occupational Medicine Scientific Society, and has served on review committees for the Ergonomic.

Interaction of isothiocyanates and glucosinolates with the Ah receptor as their chemopreventive potency

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The aryl hydrocarbon (Ah) receptor is a cytosolic transcription factor involved increasingly in many patho-physiological processes, so that antagonists of the Ah receptor imply chemopreventive potency. It regulates carcinogen-metabolising enzymes, for example the CYP1 family of cytochromes P450 and quinone reductase, which play an essential role in the biotransformation of many chemical carcinogens. Using the CALUX assay it was established that phenethylisothiocyanate, erucin and sulforaphane, are such antagonists. These isothiocyanates were poor ligands to the Ah receptor and weak inducers of CYP1A1 mRNA levels when incubated in precision-cut rat liver slices. They effectively antagonised, however, in a non-competitive manner, the activation of the receptor by the avid ligand benzo[a]pyrene. In studies involving intact glucosinolates, glucoraphanin was more potent antagonist of the Ah receptor than glucoerucin. Furthermore, phenethylisothiocyanate, erucin and sulforaphanesuppressed, in concentration-dependent manner, the benzo[a]pyrene-mediated rise in rat hepatic CYP1A1 mRNA levels in rat slices, in concordance with studies reporting that these isothiocyanatesantagonise the benzo[a]pyrene-mediated increase in the *O*-deethylation of ethoxyresorufin in both rat and human precision-cut liver slices, as well as in human mammary tumour cell line Mcf7, where sulforaphane inhibited benzo[a]pyrene-mediated CYP1A2 induction. Thus, it can be inferred that isothiocyanates are effective antagonist of the Ah receptor, and this potential may contribute to their established chemopreventive activity.

Biography

Ahmad Faizal Abdull Razis has completed his PhD in Toxicology from the University of Surrey, UK, 2012. He is currently a Senior Lecturer at the Faculty of Food Science and Technology and Researcher at Food Safety Research Centre (FOSREC) and Laboratory of UPM-MAKNA Cancer Research, Institute of Bioscience, Universiti Putra Malaysia.His research of interest is in Food Safety and Phytochemicals for cancer prevention.