

# Preface

Chronic alcohol consumption is a major health problem worldwide, and may lead to addiction and damage of almost every organ of the body. The World Health Organization (WHO) Global Burden of Disease has concluded that approximately 1.8 million people die each year due to alcohol (3.2% of all deaths). One of the most significant diseases caused by chronic alcohol consumption is cancer. According to the International Agency for Research on Cancer (IARC) in Lyon, France, alcohol is considered a carcinogen for the oral cavity, pharynx, larynx, esophagus, liver, colorectum, and the female breast. Worldwide, a total of approximately 389,000 cases of these cancers representing 3.6% of all cancers (5.2% in men and 1.7% in women) are derived from chronic alcohol ingestion.

The fact that alcohol causes cancer is not new. The first observation that alcohol is responsible for esophageal cancer was published by the French pathologist Lamu in Paris in 1910. It took a long time until 1978 when the National Institute of Health (NIH) organized a workshop on this topic due to the fact that more and more epidemiologic data appeared demonstrating the causal relationship between alcohol and certain types of cancer. However, at this time mechanisms of alcohol-mediated carcinogenesis were almost completely unknown.

A second workshop in 2004 took into account the increasing literature on possible mechanisms by which ethanol and/or its first metabolite acetaldehyde stimulates carcinogenesis. The results of this workshop were published in *ALCOHOL*. A further step forward in bringing this important issue to the scientific public was the workshop held in Lyon at the IARC in February 2007 which ended in a clear statement that alcoholic beverages are carcinogenic and that acetaldehyde is a causal factor in esophageal carcinogenesis published in the April issue 2007 of *LANCET ONCOLOGY*.

Considering this historic development, it was time for a more detailed look at the effect of alcohol on carcinogenesis in a broader perspective, including epidemiology, biochemistry as well as molecular and cell biology. On June 8–9, 2010, the Division of Metabolism and Health Effects of the National Institute of Alcoholism and Alcohol Abuse (NIAAA) has invited a panel of experts to discuss this important issue. As a result, Dr. Sam Zakhari and his colleagues presented a comprehensive

book on alcohol and cancer with major emphasis on molecular mechanisms, including the effect of alcohol metabolism on cancer, the effect of ethanol on epigenetics, intracellular signal pathways, retinoic acid metabolism, protein homeostasis, inflammation, immune surveillance, and stem cells. This book could have come at no better time. The contents of this book is carefully designed and analytically presented, summarizing an up-to-date knowledge on this topic with the most recent literature until summer 2010. The book “Alcohol and Cancer” edited by Sam Zakhari, Q. Max Guo, and Vasilis Vasiliou is a comprehensive and unique summary on a topic of general and specific interest to a broad readership, including oncologists, basic cancer researchers, gastroenterologists, hepatologists, and other specialists dealing with cancer. It will undoubtedly become an international landmark.

Dr. Sam Zakhari works at the NIH since 1986. He is Director of the Division of Metabolism and Health Effects of the NIAAA, Bethesda, MD, USA. He is an internationally well-known expert in the field of alcohol metabolism and alcohol associated toxicity, having worked in this field for decades. It is he and his coworkers who guarantee for the high standard and quality of this book. I wish to thank the authors for presenting an outstanding summary on a most important issue and I am convinced that this book receives the international recognition which it deserves.

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Helmut K. Seitz, MD, PhD, AGAF

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