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### Usefulness of nutritional agents in the chemoprevention and treatment of thoracic malignancies - An update on preclinical studies

Lung cancer is the leading cause of cancer deaths in the US (>160,000 per year) and it is estimated that >90% are due to tobacco smoke exposure. While surgery offers the sole prospect for cure, only a small percentage of lung cancer patients are candidates. Focus has turned to novel preventive strategies. Cancer chemoprevention as such a strategy is defined as the use of dietary and pharmacological intervention with specific natural or synthetic agents designed to prevent, suppress, or reverse the process of carcinogenesis before the development of malignancy. The ideal chemopreventive agent should be inexpensive, well tolerated, safe and effective, however the majority of available agents have severe side effects in some patient populations which makes their use problematic when considering long term administration. Therefore, usefulness of dietary supplements with potential chemopreventive properties is gaining increasing popularity. Dietary polyphenols such as curcumin, resveratrol, green tea catechins, and flaxseed lignans are currently being tested in pre-clinical and clinical studies in the US and worldwide. One potential strategy for lung cancer chemoprevention uses the property of these agents to activate phase II carcinogen detoxification enzymes thus modulating the metabolism of tobacco and other environmental carcinogens. Unfortunately despite preclinical success, no agents have yet been identified that benefited humans in clinical trials. With the continued growth of knowledge on tumor biology and a better definition of high-risk population groups, personalized approaches may be designed in the future to boost effectiveness of select promising botanical agents for lung cancer chemoprevention.

#### Biography

Dr. Christofidou-Solomidou completed her undergraduate studies at S.U.N.Y. at Stony Brook, NY and her Ph.D at Bonn University, Germany. After post-doctoral studies at Albany Medical College in NY and at the University of Pennsylvania in Philadelphia she joined the faculty at Penn's School of Medicine. She is an NIH-funded investigator and her research focus of involves the a) investigation of novel antioxidant approaches to acute and chronic lung disease; b) Chemoprevention of lung carcinogenesis and evaluation of anti carcinogenic effects of common botanicals. She has published more than 57 papers in high-profile journals and is serving on the editorial board of reputed journals.

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