OMICS Group Conferences
Accelerating Scientific Discovery
3rd World Congress on
Cancer Science & Therapy
October 21-23, 2013 DoubleTree by Hilton Hotel San Francisco Airport, USA

Rosemary extract enhances 5-fluoracil antitumor effect and overcomes resistance to the drug: New complementary approach for colon cancer therapy

Ana Ramirez de Molina
IMDEA Food Institute, Spain

Abstract

Colorectal cancer constitutes one of the main causes of cancer death worldwide. The aim of this work was to determine the potential of a supercritical fluid rosemary extract (SFRE), recognized as a healthy component by the European Food Safety Authority (EFSA), as an adjuvant approach to synergize with chemotherapy and avoid resistance. SFRE was assayed for antitumoral properties alone and in combination with one ofthe most used chemotherapeutic agent in colorectal cancer, 5-fluorouracil (5-FU). Additionally, colon cancer cells resistant to 5-FU were used to assay the effects of SFRE on drug resistance, and a genomic approach was followed to ascertain the mechanism by which SFRE potentiates the effect of 5-FU. Our results show that SFRE displaysspecific and dose-dependentantitumor activities, exerts a synergistic effect in combination with 5-FU, andsensitizes 5-FU-resistant cells to the therapeutic activity of this drug by modulating the expression of key enzymes involved in 5-FU metabolization.

Biography

Dr. Ana Ramírez de Molina, Coordinator of Research and Development at IMDEA Food Institute, has developed her scientific career in the identification of new molecular targets for anticancer treatment within lipid metabolism-related pathways. Previous to joining IMDEA Food Institute as the head of the program of Molecular Oncology, she worked as an associated researcher in the Traslational Oncology Unit CSIC-UAM-La Paz Hospital, performing postdoctoral research at the Cancer Research UK Centre for Therapeutics and the Sloan Kettering Cancer Center (New York). In the last years she has published more than 30 articles in prestigious international journals of her research field, and is co-inventor of 7 patents in different phases of exploitation by a biotechnology company. Several of her patents help and promoted the creation of a spin-off company focused on the development of new tumor markers and therapies in Cancer, TCD Pharma, in which she was former Director of Research, Development and Innovation for 3 years.

This study has been supported by Ministry of Economy and Competitiveness (IPT-2011-1248-060000, AGL2010-21565, RyC 2008-03734) and European Union Structural Funds.