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The anticancer potential of Mediterranean medicinal plants on colorectal cancer treatment

Cristina P R Xavier^{1,2} and Cristina Pereira-Wilson^{1,3}¹University of Minho, Portugal²University of Porto, Portugal³CITAB- Centre for the Research and Technology of Agro-Environmental and Biological Sciences, Portugal

Colorectal cancer (CRC) is the third most prevalent cancer worldwide and its incidence has been strongly associated with diet. Epidemiological studies have supported the idea that some medicinal plants may influence the risk of CRC through modulation of several biological processes, including proliferation, survival and cell death. Mutations in components of the PI3K/Akt and MAP Kinases pathways (such as mutations in KRAS and BRAF) and in the p53 gene are frequently in CRC and influence the response to therapy. Thus, components of these pathways are important molecular targets of plant's extracts or individual natural compounds for CRC treatment. We recently showed that Mediterranean species of medicinal plants of the genres *Salvia* and *Hypericum* and some of their main phytochemical constituents have the ability to control CRC progression by modulating molecular targets of the PI3K/Akt and MAP Kinases signaling pathways. In addition, we demonstrated that some natural compounds present in the diet and in those plants may also potentiate the response to the chemotherapeutic drug 5-FU, such as quercetin increases 5-FU efficacy in p53 wild-type tumors while ursolic acid induces cell death independent of p53. This work suggests the applicability of these plants' extracts or individual constituents in cancer therapy as well as a personalize diet according to the molecular profile of the patient that may be essential to maximize treatment efficacy.

Biography

Cristina P R Xavier has a PhD degree in Biological Sciences from University of Minho, Portugal, 2010. She completed her Post-doctoral studies for 3 years from Cancer Therapeutic Division, Institute of Cancer Research (ICR), UK. She is currently a Post-Doctoral Researcher in the Cancer Drug Resistance Group of i3S/IPATIMUP, Porto, Portugal. She is first author of 7 peer-reviewed scientific papers and is co-author of 2 peer-reviewed scientific papers (she has an H-index of 5 and more than 190 citations). She has also been a reviewer for international scientific journals.

crisprxavier@gmail.com

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