



**Programa Inter-Universitário de Doutoramento
em Biologia de Plantas Fundamental e Aplicada**

2º WorkShop Anual / *Annual*



18 e 19 de Abril de 2011 / *April 18th and 19th, 2011*

Universidade do Minho / *University of Minho*

**PROGRAMA / PROGRAMME
Livro de resumos / *Book of abstracts***

for all the observed cell death induced by UA. Thus, we asked whether UA was also inducing autophagy. We observed that UA induced accumulation of autophagosomes (using fluorescent dyes) as well as of LC3-II (assessed by western blot), which was also significantly inhibited by SP. These results suggest that UA induction of apoptosis and autophagy is JNK dependent. A decrease in mutated p53 and phospho mTOR, which are associated with an induction of autophagy, were also observed. In conclusion, UA showed anticancer activity by inducing apoptosis and autophagy, which was JNK-dependent in HCT15 cells. In addition, in these resistant cells, UA synergistically cooperate with 5-FU to induce cell death

P5 DNA DAMAGE PREVENTION AND SIGNALING PATHWAY REGULATION BY SAGE IN A COLON CANCER MODEL

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Colorectal cancer (CRC) is a common malignancy and significant cause of mortality in Western societies. It develops through an accumulation of genetic and epigenetic alterations, transforming normal colon cells and giving them growth advantage. Many food plants are rich in bioactive compounds and have shown to possess anticancer properties.

We proposed to explore the effects of sage (*Salvia officinalis* (SO)) water extract (herbal tea) drinking on colon cancer prevention and modulation of epigenetic events. F344 rats were used to study the effects of sage tea drinking on pre-initiation (SO treatment before AOM exposure) and post-initiation (SO after AOM exposure) phases of carcinogenesis. We found a chemopreventive effect of SO in the pre-initiation group, but not in the post-initiation. We then investigated if SO affected AOM metabolism, searching for effects on CYP2E1 expression and activity. We found that AOM decreased CYP2E1 activity when compared with control, but SO treatment before AOM prevented this effect. The capacity of SO in vivo treatment to protect colonocytes from H₂O₂ damage induced in vitro was also investigated. SO decreased significantly the oxidative H₂O₂-induced DNA damage. We also are searching for alterations in expression of key proteins involved in signalling pathways important for cell proliferation or apoptosis and proteins involved in DNA repair.

Sage water extract seems to have the ability to prevent CRC and studies to further explore this potential are ongoing.

P6 PREPARATION OF JATROPHA CURCAS OIL AS FEEDSTOCK FOR BIODIESEL PRODUCTION

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Jatropha curcas plant can grow in arid soils and produce high non edible oil yields. *Jatropha curcas* oil is considered as one of the most important feedstock for biodiesel production. Preparation of this oil must meet the specification of feedstock that could ensure the highest quality of biodiesel. Adjustment of Free Fatty Acid (FFA) content is one of the main steps before the transesterification process using base as