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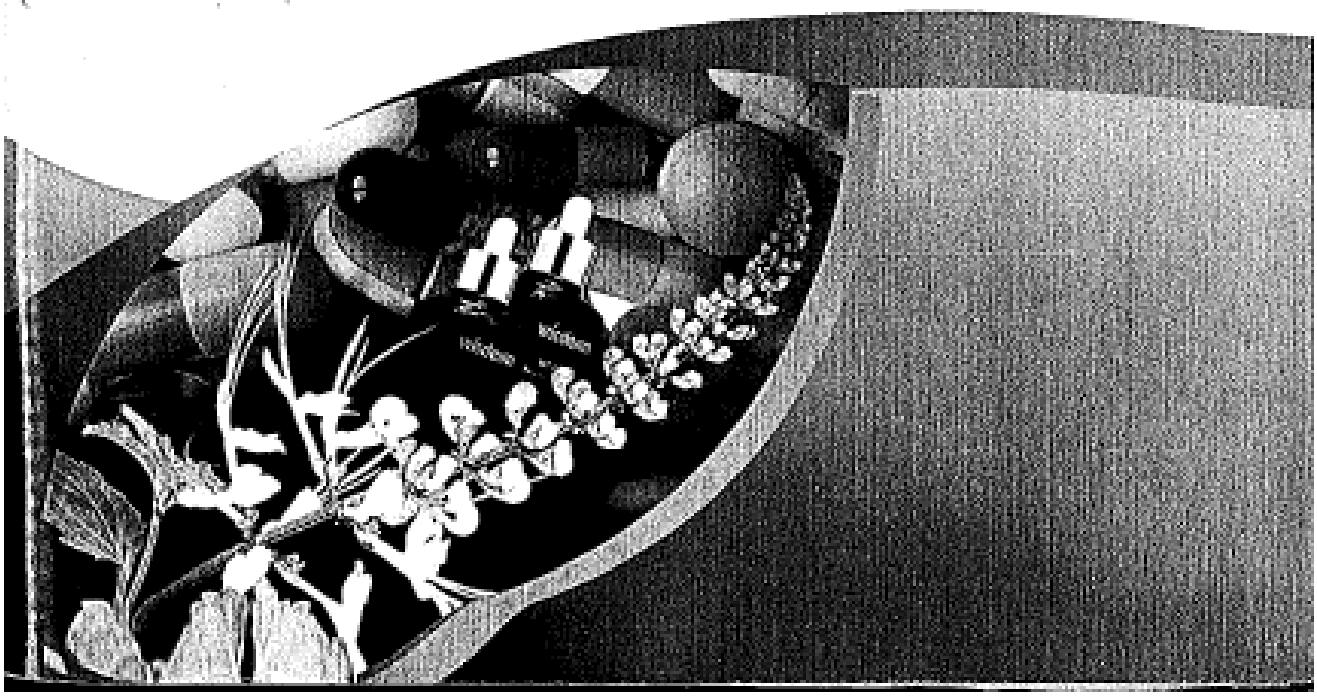

ABSTRACT FOR PARALLEL SESSIONS

S1-A03

Anti-Cancer Activity of Un-inoculated Agarwood Branch against MCF-7 Breast Cancer Cells

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Abstract
Agarwood or Gaharu by definition is the resin impregnated heartwood from Aquilaria species that produces unique aromatic scent when burnt. Apart from religious rituals and perfumes, agarwood has also been used as traditional medicines leading to the interest of this study which is to screen for anti-cancer properties to further support the traditional medicine claims. This present study aims to investigate the potential anti-cancer activity of un-inoculated A.sub-integra agarwood branch against MCF-7 breast cancer cells and screen for the most influential extraction parameters. Experimental design was generated using the MODDE software from SIMCA-P+ V12.0.1. Parameters included in the design were temperature (°C), time (hour), agitation speed (rpm), and ratio of sample to the solvent (g/ml). Sulforhodamine B (SRB) assay was used to determine the potential cytotoxic effects of ABE against MCF-7 breast cancer cells. It was found that ethanolic-extract of agarwood branch (ABE) from experimental run 11 with 12 hours extraction time, 50 °C temperature, 100 rpm and 1:20 ratio of solid to extraction solvent gave the highest yield of 21.3 % (g/g) of ABE from 3 gram of sample material. Regression analysis found that agitation speed has significant negative effect on the yield of crude extract while temperature and temperature-volume coefficients both showed significant positive effects. Meanwhile, run 16 (extraction time of 24 hours, 50 °C extraction temperature, agitation speed of 200 rpm and 1:20 solid to extraction solvent ratio) gave the lowest IC_{50} of 8 µg/ml against MCF-7 cells. In conclusion, results from this study were able to confirm the anti-cancer effects of un-inoculated agarwood branch. More studies are warranted to elucidate the mechanisms of agarwood extract in cancer prevention and therapeutics. This will further add value to the currently growing agarwood industry.

Keywords: Agarwood, cancer, MCF-7, SRB assay, cell culture