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Genotoxic/anti-genotoxic activities of *Clematis flammula* extracts

Clematis flammula leaf extracts are widely used in folklore medicine in Algeria to treat anti-inflammatory disorders and anticancer potential. Validation of the use of medicinal plants should also shed the light on their safety, based on the lack of their cytotoxicity and genotoxicity. The aim of our study was to assess the cytotoxicity and genotoxicity/anti-genotoxicity of the plant leaf extracts by the *Allium cepa*. In the same context, we tested their anti-cancer potential on two ovarian cancer cell lines OVCAR3 and A2780. Morphological observations of *Allium cepa* root cells after treatment by 100 and 300µg/kg of *C. flammula* leaf extracts, sodium azide and a mixture of both have revealed that an absence of toxicity was observed for the plant extracts contrary to sodium azide. However, the combination of *C. flammula* extract at 300µg/

ml with sodium azide has induced a shortening of the root bulb (ΔL between - 1,22 mm and 0,02 mm) associated with marked changes in color, form, and consistency. Similarly, the mitotic index (MI) was impacted by sodium azide (100µg/ml) especially in prophase but not with the extract (100, 300µg/ml). The results are confirmed by the increase of chromosomal aberrations (C-mitosis, anaphase bridges and micronuclei) following sodium azide treatment. On the other hand, the MTT test indicated that survival of ovarian cancer cells (OVCAR3) was reduced to half at 10µg/ml after 72h which was less effective than that against A2780 of which survival was reduced to almost 30% at the same concentration and time scale.

Biography

Dina Atmani Kilani has obtained her BS degree in Biology from the American University of Beirut, Lebanon. She obtained her master degree in Biology from Cal State LA, USA and her PhD from the University of Bejaia, Algeria. She has been teaching in the fields of Molecular Biology and Genetics since 1990 in the University of Bejaia. Furthermore, she was implicated in research in the field of medicinal plants with the collaboration of her colleagues.

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