

## EVALUATION OF THE CHEMOPREVENTION EFFECTS OF RUTIN TOWARDS THE HEMATOTOXICITY OF THE ANTICANCEROUS DRUG CYTARABINE *IN VIVO* USING BALB C MICE.

**Chafia Tigrine<sup>a</sup>, Hamama Bouriche<sup>b</sup>, Abdelkarim Kameli<sup>a</sup>, Khaled Kharraz<sup>a</sup> and Mohammed Mahdid<sup>a</sup>.**

*a : Laboratoire de Biochimie, Ecole Supérieure Normale (ENS), Vieux Kouba. Alger.*

*b : Laboratoire de Biochimie Appliquée, Université Ferhat Abbas, Sétif.*

[tigrinechaf@yahoo.fr](mailto:tigrinechaf@yahoo.fr)

### ABSTRACT:

Rutin, a natural flavone derivative, quercetin-3-O-rhamnosylglucoside, is known for its pharmacological properties. In the present study, the chemo preventive effect of rutin towards the hematotoxicity caused by the anticancerous drug cytarabine is studied *in vivo* using Balb C mice. The analysis of the blood numeration formula showed that the administration of a single dose of cytarabine (100 mg/m<sup>2</sup>, subcutaneous injection) caused a significant myelodepression mainly after 24 ( $p \leq 0.1$ ) and 48 ( $p \leq 0.05$ ) hours of cytarabine subcutaneous injection. Thus, the number of the red and white cells decreased in a remarkable way. However, the number of these cells increased after 72 hours which means the degradation and elimination of cytarabine. On the other hand, the administration of a daily amount of rutin (100 mg/kg, intraperitoneal injection) during 4 days before cytarabine subcutaneous injection did not exert any cytotoxic effects on the blood cells. Moreover, the combination rutin/cytarabine protected, as well as, the red and the white cells from the toxicity of cytarabine. The number of these cells is comparable with that of the control group.

**KEY WORDS:** Flavonoids, rutin, chemotherapy, cytarabine, cancer, chemoprevention