

Correction of cyclophosphane-induced chromosomal disorders using the extract of walnut septum in *in vitro* system

Tamar Sigua

e-mail: tamar.sigua@tsu.ge (sylfaen, 10 pt)
Division of Genetics, Department of Biology, Faculty
of Exact and Natural Sciences, Iv. Javakishvili Tbilisi
State University, University st. 13

Cyclophosphane is the drug used in oncological practice, characterized with mutagenic effect, which is reflected in the homeostasis of the cells. By us in mice (*in vivo*) was conducted experiments and was shown that the deleterious effect of Cyclophosphane on cells subordinated to correction using the extract of walnut septum. Accordingly, it was interesting to evaluate the action of Cyclophosphane and walnut septum extract on human cells, in *in vitro* system.

In order to study the protective effect of walnut septum extract were used the cells of human peripheral blood lymphocyte cultures, under the influence of Cyclophosphane.

Experiments were conducted on mitogen stimulated lymphocyte cultures of healthy donors. Cell cultures were tested for exposure two concentrations of Cyclophosphane - of 100 microgram/ml and 50 microgram/ml, which is 5 times and 10 times (respectively) less than the dose used for therapeutic purposes.

Was found that 100 microgram/ml concentration has a cytotoxic effect, because could not be collected required quantity of metaphases for statistically significant results.

As is evident induced aberrations by the influence of Cyclophosphane (50 microgram/ml concentration) (0.5 aberr./cell; in control - 0.02 aberr./cell) subject to adjustment by exposure of walnut septum extract (0.26 aberr./cell). The influence of walnut septum extract also significantly lowered the number of chromosome fragile sites on cell, induced by Cyclophosphane (1.2 fr.site /cell - induced by Cyclophosphane; 0.4 fr.site /cell - under exposure of walnut septum extract).

Thus, the walnut septum extract revealed their protective effects also in *in vitro* cell system, in the conditions of damaging exposure of Cyclophosphane.

The Study was done in framework of targeted research project of faculty.