

The laboratory of General and Molecular Genetics

The main directions of the Laboratory of General and Molecular Genetics are ecogenetics and genetic toxicology. Studies are carried out *in vitro* and *in vivo* with application of chromosomal aberrations analysis, micronuclei and Comet assays, FISH, MN-FISH, Comet-FISH and gene mutation test in *Tradescantia*.

The influence of chromosomes localization in the nuclei on distribution of chromosomal aberrations and DNA copy number variations (CNV) are studied in human cells. The research of toxicological activity of plant extracts is carried out for identification of their pharmacological properties. Genotoxic and cytotoxic activities of some mycotoxins are investigated. Genotoxicity of soil and water samples from different territories of Armenia are studied and its correlation with contamination by heavy metals and other pollutants is analyzed. The palynological studies of archaeological strata are conducted. Investigation of cytoembryological and morphometric characteristics of some Armenian grape cultivars and apricot species is carried out. The spectrophotometrical quantitative analysis of polyphenols and anthocyanins of aboriginal grape varieties and wine is conducted. The resistance of aboriginal and new grape varieties against mildew and oidium diseases is analyzed, the genotypic and phenotypic studies of these plants are carried out along with sequencing of loci related to disease resistance.