# SISTER CHROMATID EXCHANGE IN CHROMOSOMES


## Summary

Sister chromatid exchange (SCE) is a reciprocal exchange of homologous chromatids of the same chromosome. SCEs result from replicating DNA from a damaged matrix and can occur only when changes in DNA have not been removed before the cell enters phase S of the cell cycle when condensed sister chromatids "pair" and exchanges take place between identical DNA sequences situated close to each other. Sister chromatid exchanges are often used in biomonitoring of potentially carcinogenic substance genotoxicity. Due to their sensitivity they enable determining the degree of DNA damage or deficiencies in its repair. The SCE test answers the question of how much chromosomes are sensitive to the damaging factor and how strong the genotoxic impact of the factor is. The SCE is a reliable technique which makes it possible to select from a populations the individuals which are genetically most prone to illnesses and to remove them from further reproduction and breeding.