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CHROMOTHRIPSIS AS A FORM OF CELL GENOME REORGANIZATION

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The phenomenon of chromothripsis was discovered in 2011. The chromothripsis changed the concept of genome variability, the process of oncogenic transformation, and the mechanisms of hereditary diseases. This phenomenon is a massive chromosomal rearrangement that occurs simultaneously. In the International System of Human Cyto-

genetic Nomenclature, since 2013, chromothripsis has been defined as complex patterns of alternating changes in the gene copies number (normal, gain, or loss) along a chromosome or chromosomal segment. The mechanisms of this phenomenon are not yet fully understood. In this review, we tried to collect all the currently available information about chromothripsis and provide insight into this phenomenon. In the review, we describe the history of chromothripsis discovery, its prevalence in genomes, the causes and mechanisms underlying this phenomenon, as well as methods for its detection.

Keywords: chromothripsis, chromosome instability, micronuclei, cancer, transformation