

## KARYOTYPE ABNORMALITIES IN REFERENCE CELL LINES USED IN THE LABORATORY

Established cell lines are very useful because they are immortal and can be used in different laboratories, allowing for cumulative omics data. In this regard, HeLa cells can be considered the first paradigmatic example. They, **however**, are also a good example of the many chromosomal rearrangements tumor cell lines can contain. Chromosomal rearrangements can also be acquired by normal cells during the immortalization process. This rearrangement can produce dramatic changes in gene expression and affect cell phenotype and behavior during in vitro culture. In an article in Genome Biology, [Maslova et al.](#)<sup>1</sup> studied the genomic rearrangements of the chicken LSCC-HD3 cell line (HD3), generated from erythroid precursors and used as an avian model for erythroid differentiation and gene expression. For this task they used the [Hi-C methodology](#)<sup>2</sup>. They found that the HD3 cell line has a severely rearranged karyotype with most of the chromosomes involved in translocations. So, it has to be used with caution for erythroid differentiation and gene expression. But, on the other hand, it can be used in studies of genome structure–function relationships.

<https://bmcbgenomics.biomedcentral.com/articles/10.1186/s12864-023-09158-y>

1- [https://en.wikipedia.org/wiki/Hi-C\\_\(genomic\\_analysis\\_technique\)](https://en.wikipedia.org/wiki/Hi-C_(genomic_analysis_technique))