XV FISV Congress

Sapienza University of Rome

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Abstract

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You currently have one abstract submitted for this congress.

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Preferred presentation type:

I only want to present a POSTER.

Topic:
Chromosome Biology, Cell Division and Cell Cycle

Two immortalized rat astrocyte cell lines as in vitro model for specific cell proliferation studies: cytogenetic and epigenomic characterization and diversification

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Here we report differences between: 1) a heterogeneous population of primary rat brain astrocytes (Primary), in culture since several years ago, and 2) a cloned cell line (Clone), obtained from the Primary cells. Both populations maintain astrocyte morphology but, according to cytogenetic and epigenomic characterization, differ for the chromosomal asset from rat normal cells (42 chromosomes): Primary cells show mostly a bimodal karyotype with 41 or 43 chromosomes, and Clone has a unique-modal karyotype of 43 chromosomes. Interestingly, we also found that both cell lines show genome-wide DNA hypomethylation, with Clone showing even more pronounced demethylation respect to Primary cells. These features, together with a faster doubling time, confer to Clone an altered proliferation control phenotype. Conversely, the Primary cell population is more similar to normal cells. Used together the two cell populations are a promising model to investigate in vitro modifications of genome, epigenome and others 'omics', mimicking tumor clonal evolution-derived heterogeneity, particularly useful in studies on CNS cancers, which derive mostly from glial cells.