Human Colonic Epithelial Cell (hCEC) Line (UTSW)-control Ctr sgNC (x2)

Two isogenic hCEC clones transduced with a lentiviral vector expressing the negative control sgRNA (sgNC) that does not target the human genome.

Aneuploidy, characterized by chromosome gains or losses, is a key feature of cancer. KaryoCreate (Karyotype CRISPR Engineered Aneuploidy Technology) is a system developed to generate chromosome-specific aneuploidies. It works by co-expressing an sgRNA that targets chromosome-specific CENPA-binding -satellite repeats along with dCas9 fused to mutant KNL1. Unique and highly specific sgRNAs were designed for 19 of the 24 chromosomes in Human TERT TP53 -/- human colonic epithelial cells (hCECs). The expression of these constructs results in the missegregation and induction of gains or losses of the targeted chromosome in cellular progeny, with an average efficiency of 8% for gains and 12% for losses, reaching up to 20%, validated across 10 chromosomes.

References

1. Bosco et al. , https://pubmed.ncbi.nlm.nih.gov/37075754/

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