# Human Colonic Epithelial Cell (hCEC) Line (UTSW)-Chr 18q loss (x2)

**Technology ID**

DAV06-17

**Category**

Life Sciences/Materials/Cell Lines

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### Two isogenic hCeC clones for targeting chromosome 18q loss

Aneuploidy, the presence of chromosome gains or losses, is a hallmark of cancer. Here, we describe KaryoCreate (Karyotype CRISPR Engineered Aneuploidy Technology), a system that enables generation of chromosome-specific aneuploidies by co-expression of an sgRNA targeting chromosome-specific CENPA-binding -satellite repeats together with dCas9 fused to mutant KNL1. We designed unique and highly specific sgRNAs for 19 of the 24 chromosomes. Expression of these constructs leads to 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 (up to 20%) validated across 10 chromosomes. Using KaryoCreate in colon epithelial cells, chromosome 18q loss, frequent in gastrointestinal cancers, promotes resistance to TGFβ, likely due to synergistic hemizygous deletion of multiple genes.

### References


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