

# Genetically Modified Immortalized Cell Lines

## With CompoZr® ZFN Technology

### ZFN-modified Immortal Cell Lines

Sigma® Life Science proudly offers Genetically-modified Immortal Cell Lines. This rapidly expanding range of genetically modified mammalian cell lines was generated using the revolutionary CompoZr Zinc Finger Nuclease (ZFN) technology, for use in areas such as basic research, target validation, drug development and disease modelling. With targeted and heritable gene deletions, integrations or modifications our isogenic cell lines give you the tools to take your research to new heights.

For more about the Immortalized Cell Lines, please visit [wherebiobegins.com/biocells](http://wherebiobegins.com/biocells)

For more about the CompoZr technology used to make these cell lines, please visit [compozrzfn.com](http://compozrzfn.com)

### Oncology Knockout Cell Lines

An individual patient’s response to therapy may vary depending on their unique genotype. To better understand the genetics of cancer, we generated genetically-defined mutations in human cell lines that model patient-relevant genome alterations. This will enable researchers to study disease gene targets in an isogenic setting, under the endogenous promoter and enable better avenues for therapeutic research.

### Benefits

- A clean gene knockout in human cells with complete loss of the protein
- Enables study of gene function in isogenic setting
- “Mini-patients” for testing drug response, drug resistance and drug screening
- Accurately model target patient genotype
- Target ID and validation with complete loss of gene
- Conduct complicated genetics in human cell systems

### Products Available

- 6 gene Knockouts in 3 different cell lines
- Genes: p53, PTEN, BAX, SMAD4, HIF1a and PIK3CA
- Cell Lines used: DLD1, SW48 and A549

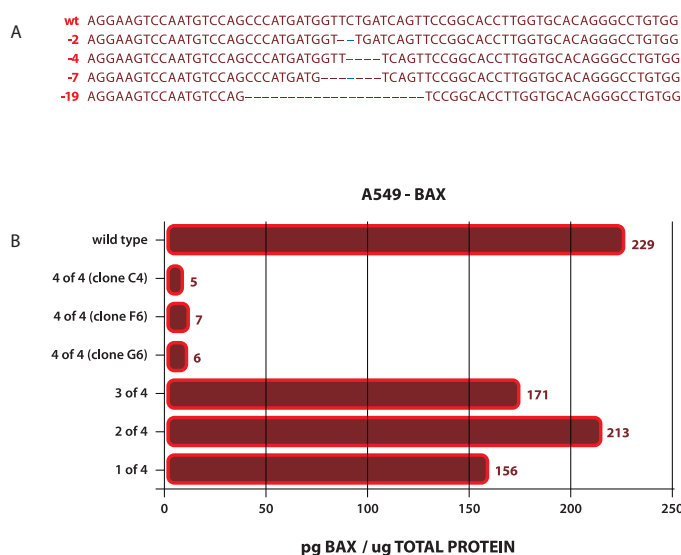
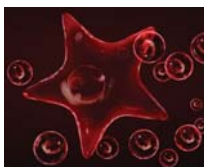


Figure 1: Knockout of tetraploid BAX in A549 cells using ZFNs. (A) Following treatment with a ZFN specific for BAX, a clone was isolated that contained a unique disruption in all four alleles of BAX. The DNA sequence of the wildtype and four disrupted alleles are shown above. (B) BAX protein concentration was measured in wild-type and knockout cell lines using an enzyme immunometric assay specific for BAX. For three unique clones, each with all 4 alleles disrupted, the measurement was below the lower limit of detection demonstrating that no BAX protein is produced when 4 out of 4 alleles are disrupted. Clones with 1, 2 or 3 of four alleles disrupted produce less BAX protein (The linear detection limit for the assay is at 150 pg).



Immortal Cell Lines  
Achieve Stellar Results

## Cytoskeletal Marker Cell Lines

The study of gene function has long been limited by the use of over-expression systems and by tedious staining procedures. To enable scientists to study protein function and protein localization in a live cellular system, we have generated engineered human U2OS cell lines where cytoskeletal markers are fluorescently tagged at the endogenous locus.

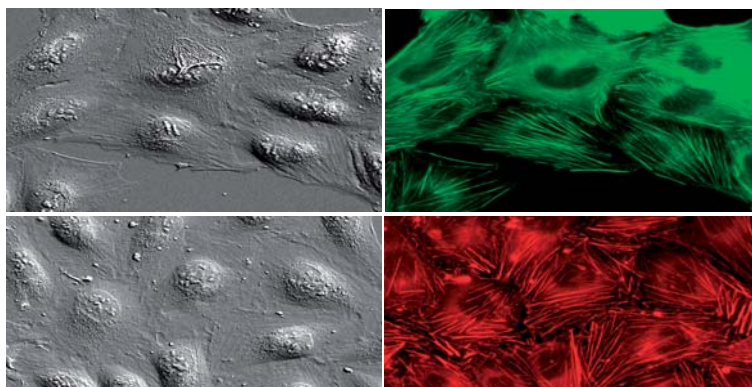


Figure 2: U2OS cell lines with  $\beta$ -Actin tagged with green fluorescent protein (Top) and red fluorescent protein (Bottom) at their endogenous locus.

### Benefits

- Protein is at wild-type levels
- Endogenous promoter-driven
- Ability to monitor protein localization in live cells
- Stable, heritable gene modifications allow for high content screening

### Products Available

- 3 genes tagged with fluorescent markers
- Genes:  $\beta$ -Actin,  $\alpha$ -Tubulin and LaminB
- Cell Line used: U2OS

For more information please contact  
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**Do not see your gene in your cell line? Ask about our Custom Cell Engineering Service!**