



**Applied StemCell**



**Fast! Transgenic Mice**

**TARGATT™**

# Application Guide

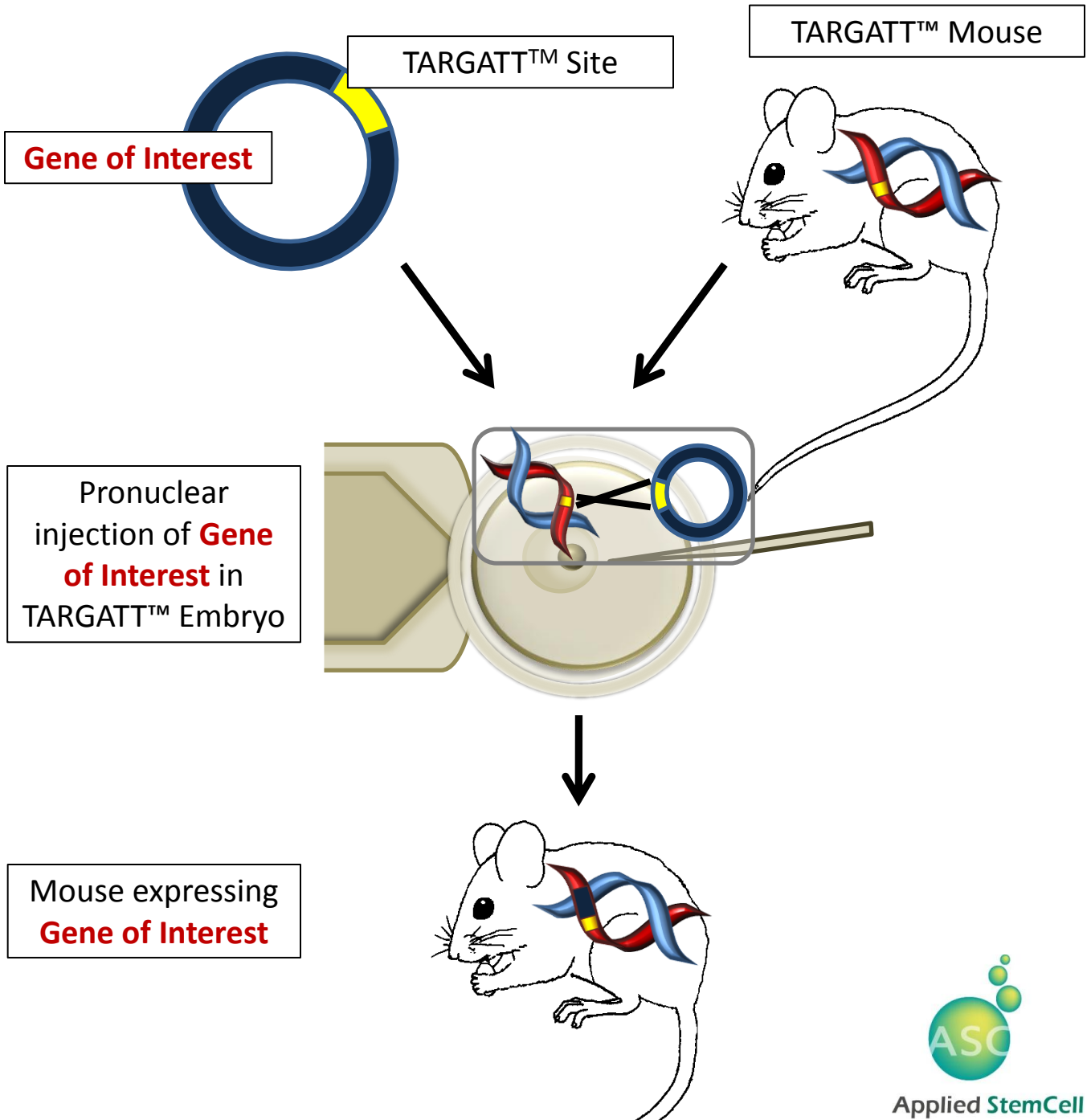
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**Applied StemCell, Inc.,**  
1165 O'Brien Dr, Suite A  
Menlo Park, CA 94025

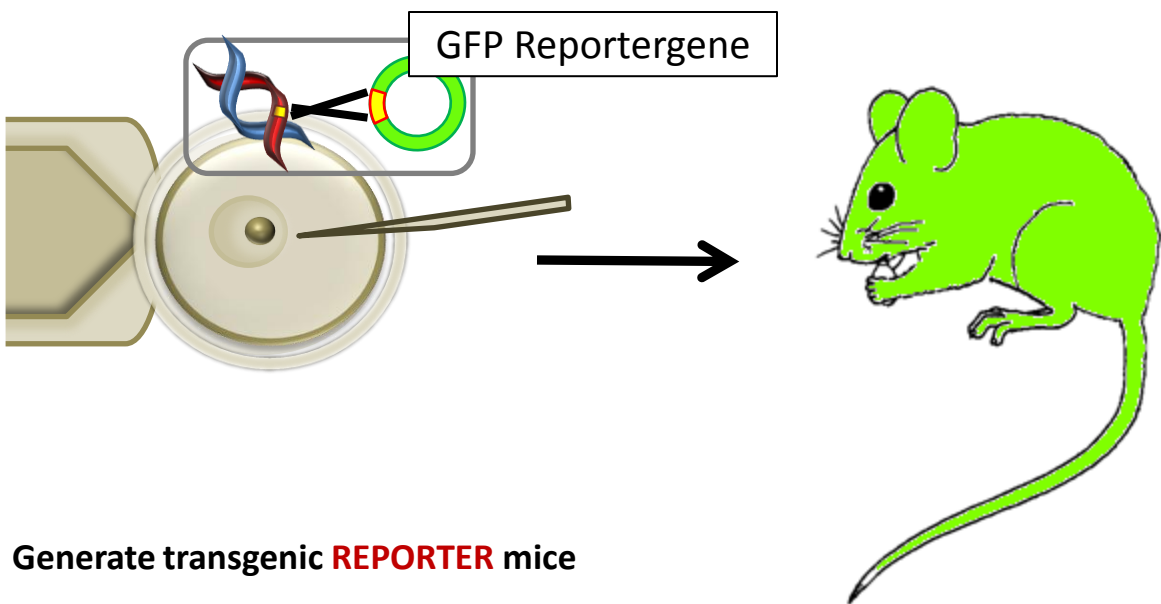
Phone: (866) 497-4180 (US Toll Free); 408-773-8007 Fax: 408-773-8238  
info@appliedstemcell.com www.appliedstemcell.com

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## Technology Overview



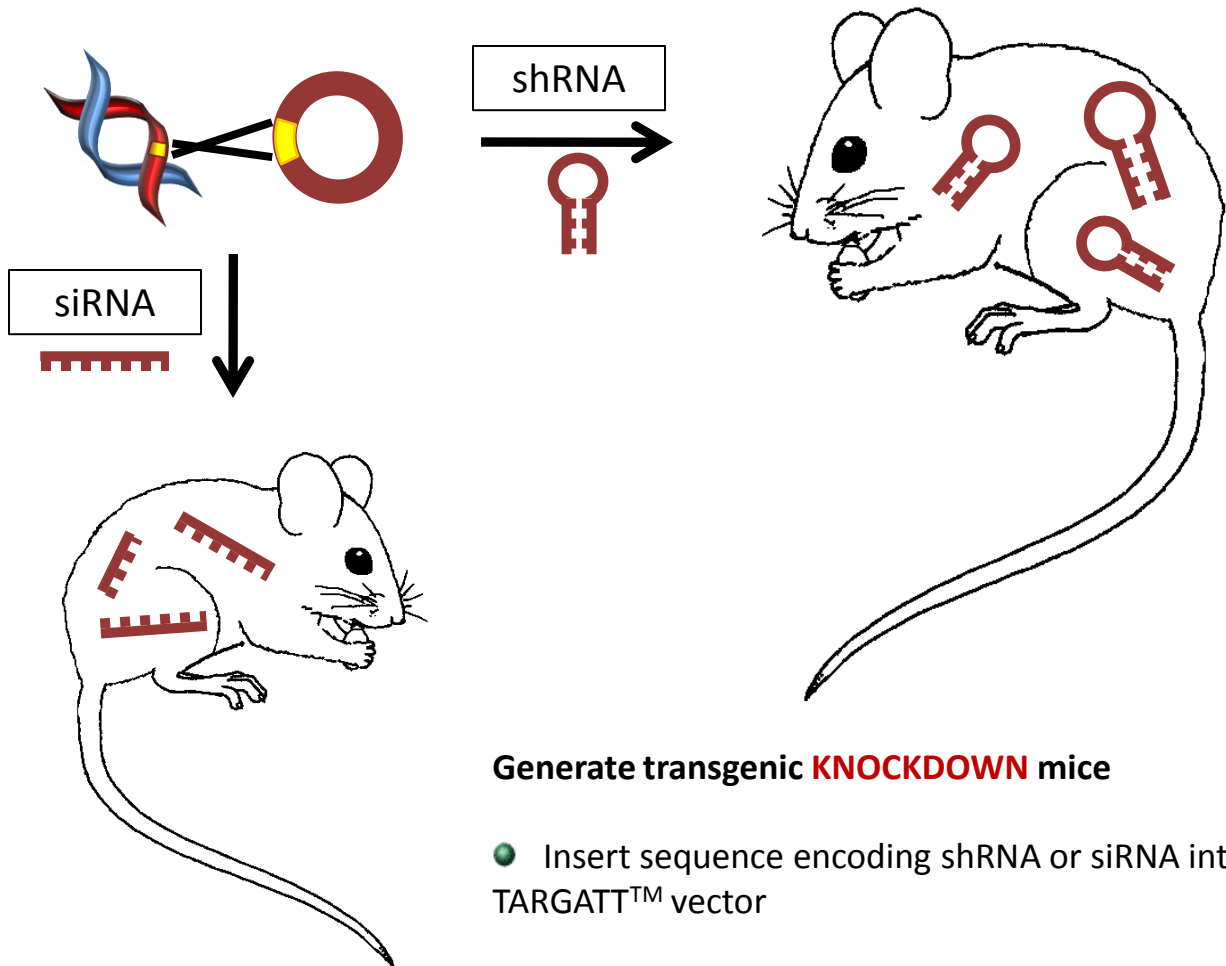
## Overexpression of a Reporter Gene



### Generate transgenic **REPORTER** mice

- Insert reporter gene into TARGATT™ vector
  - GFP
  - Luciferase
  - lacZ
  - ...
- Microinject reporter vector into TARGATT™ embryos
- Pups will express reporter gene

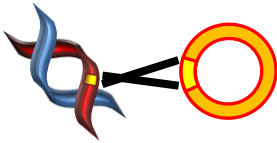
## Gene Knockdown by shRNA/siRNA



### Generate transgenic **KNOCKDOWN** mice

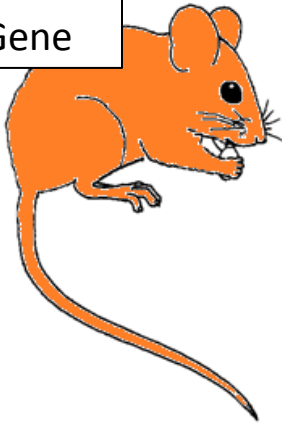
- Insert sequence encoding shRNA or siRNA into TARGATT™ vector
- Microinject vector into TARGATT™ embryos
- Pups will express silencing construct

## Humanized Mouse Models

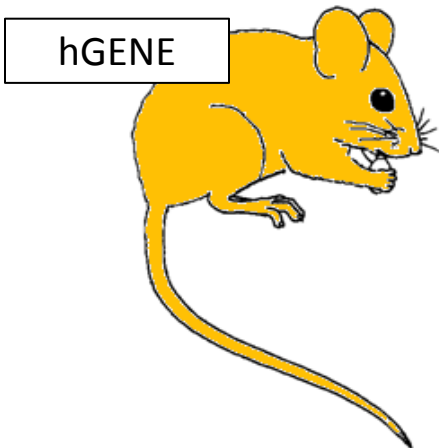


Human  
Gene of  
Interest

hGENE  
mGene



mGene -/-



hGENE

### Generate transgenic **HUMANIZED** mice

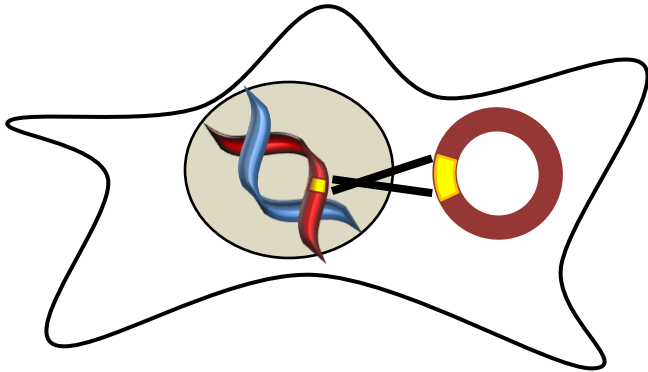
- Insert human gene of interest into TARGATT™ vector
- Microinject vector into TARGATT™ embryos

- Cross TARGATT™ mouse with knockout mouse for gene of interest

- Progeny has mouse gene replaced with human gene

## Gene Transfer into Mammalian Cell Lines

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### Applications

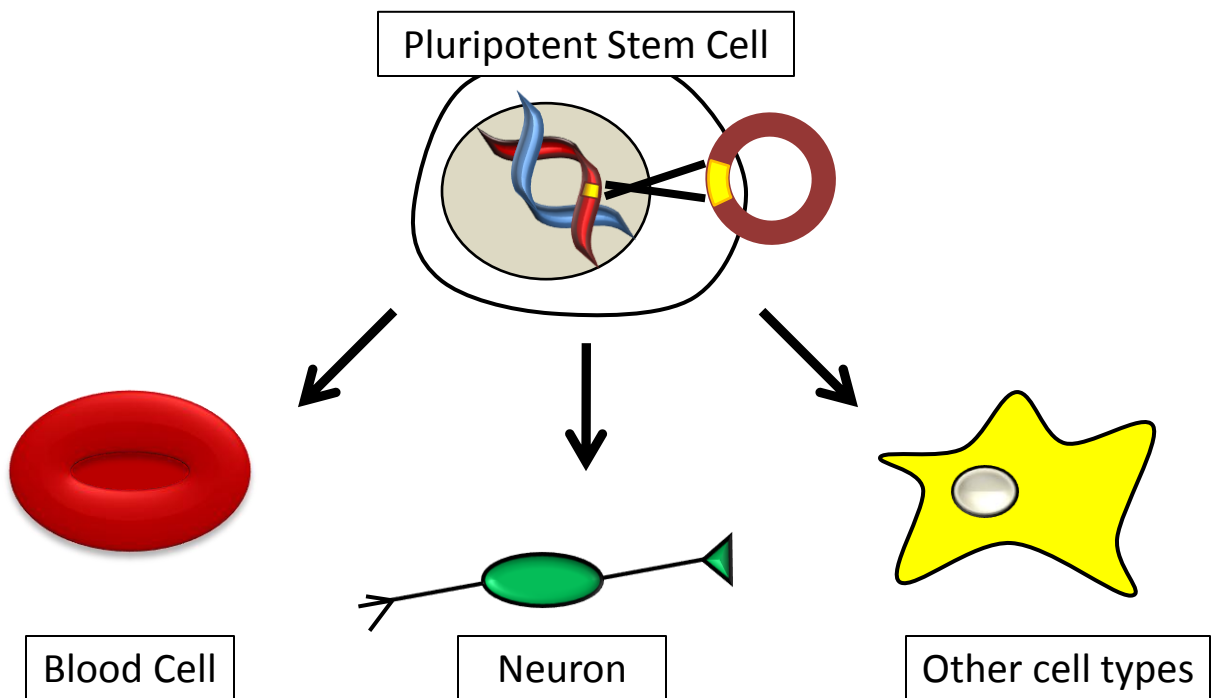
- Protein overexpression
- Drug screening
- Generation of transgenic mice (large inserts, BACs)

### Generate transgenic cell lines (available soon)

- CHO cells
- 293 cells
- Mouse ES cell lines
  - 129
  - B6
  - FVB

# Transgenic Stem Cells

- Human/Mouse **Embryonic Stem (ES)** cells
- Human/Mouse **Induced Pluripotent Stem (iPS)** cells



## Applications

- Examine gene function during differentiation
- Transgene can induce/support **directed** differentiation
- Cell-based assays