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Inspiration for Life Science

Code No. PLD05

Research Reagent Only

## Mutant human Diphtheria Toxin Receptor cDNA

TRECK system

Diphtheria toxin (DT) induces cell death by inhibition of protein synthesis, however, the sensitivity to the toxin differs in species. This is due to the difference of domain structure of diphtheria toxin receptor (human heparin-binding EGF-like growth factor, hHB-EGF). Diphtheria toxin tightly binds to human HB-EGF, but not to mouse HG-EGF. Therefore, mice exhibit resistance to diphtheria toxin.

TRECK (toxin receptor-mediated cell knockout) system is the method to generate novel model mice which utilizes the difference of toxin sensitivity between species. This system developed by Prof. Dr. Kenji Kohno in Nara Institute of Science and Technology. In this system, transgenic or knock-in mice, which express human diphtheria toxin receptor under specific promoter of your choice, is constructed. Then, the administration of diphtheria toxin to the mice causes death of specific type of cells which expresses the receptor gene.

The plasmid we provide contains human HB-EGF cDNA with mutations (I117L/L148V) which repress growth factor activities as HB-EGF. This plasmid can be used to construct expression vectors for TRECK system.

Material	Plasmid DNA
Quantity	5 µg DNA/vial, 20 µL TE (sterilized)
Storage	- 20 degree C Handle with care to avoid DNA degradation by nuclease contamination Plasmid is not treated in endotoxin free condition.



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【References】

M.Saito *et al.*, *Nat. Biotech.* **19**, 746- 750, 2002

N Furukawa *et al.*, *J Biochem.* **140**, 831-841, 2006

K.Matsuoka *et al.*, *Biochem. Biophys. Res. Commun.*, **436**(3), 400-405, 2013

Please notice that some transgenic animal lines generated with this system are covered by the claims of Patent.  
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