

***H11-Vil1-iCre-ployA* Cas9-KI Strategy**

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Reviewer:

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Design Date:

2018/4/12

Project Overview

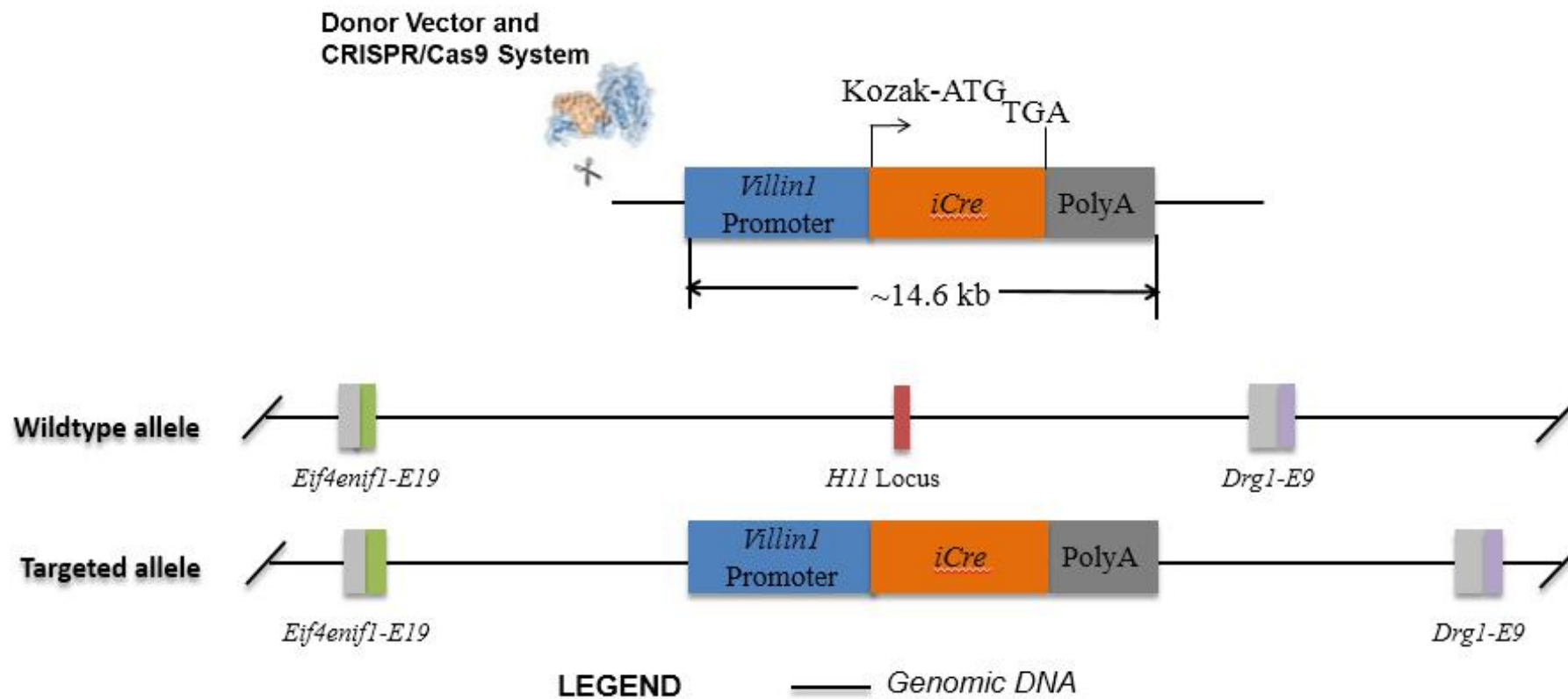
Project Name	<i>H11-Vil1-iCre-ployA</i>
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Project type	Cas9-KI
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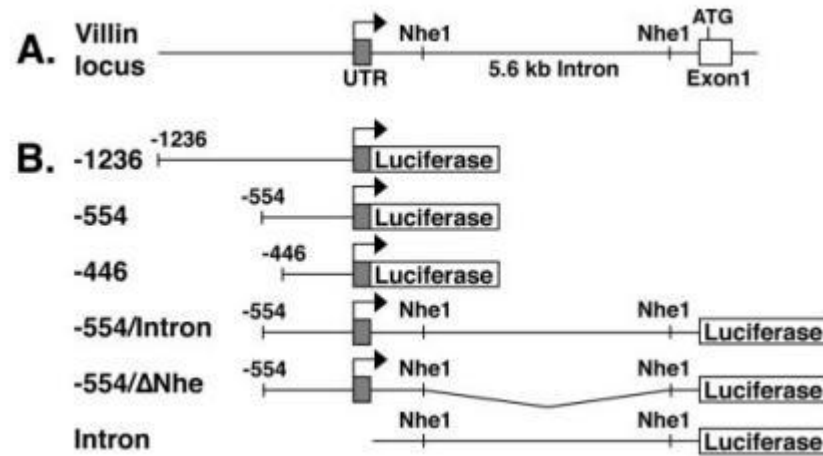
Strain background	C57BL/6J
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Knockin strategy

The *Vill-iCre-loyA* fragment was inserted into H11 site of mice and the schematic diagram is as follows:

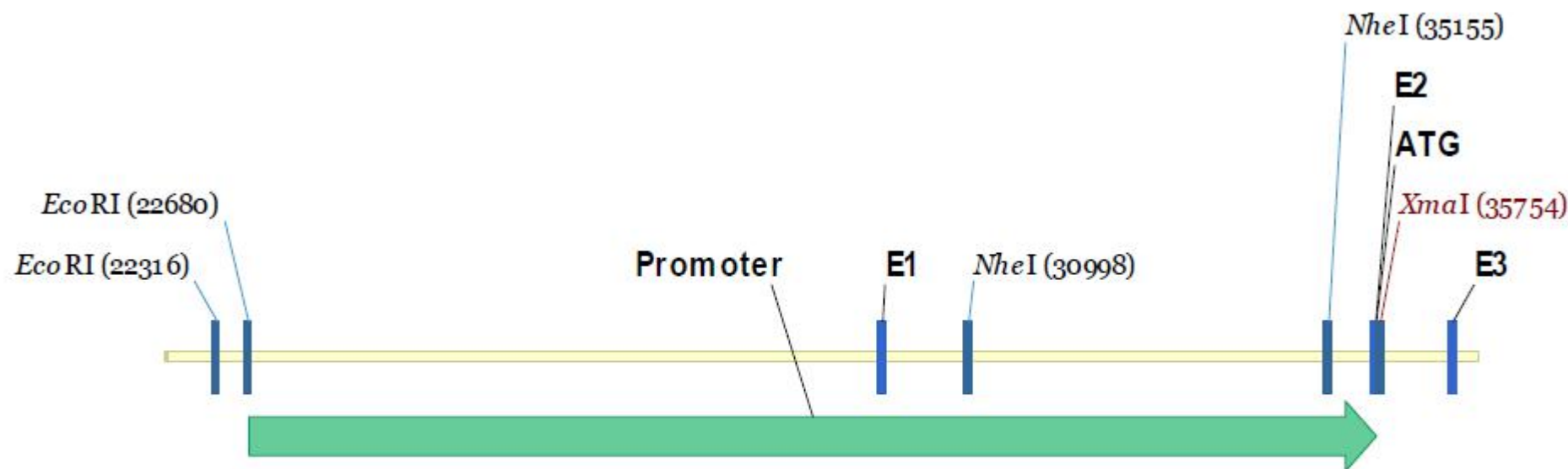


Mouse *Vil1* Promoter^[1]



The locus contains an upstream untranslated exon (UTR) and a 5.6-kb region corresponding to intron 1. The start codon for protein translation is located in exon 1.

Mouse *Vil1* Promoter



Fragment of Mouse Villin1 genomic
15136 bp (molecule 66184 bp)

Mouse *Vil1* Promoter Sequence(~13.0kb)

[illegible]

- H11, located on mouse chromosome 11, is a safe site for foreign gene insertion. The foreign gene integrated into this site can be expressed stably and efficiently without destroying the function of endogenous gene.
- In this study, the *Vill-iCre-ptyoA* gene fragment was inserted into H11 site of mice by CRISPR/Cas9 technology. The brief process is as follows: the donor vector and sgRNA were constructed in vitro, Cas9, donor and sgRNA were microinjected into the fertilized eggs of C57BL/6J mice, and F0 generation mice were obtained. The F0 positive mice were mated with C57BL/6J mice by PCR, sequencing and southern blot, then the stable inheritance of F1 positive mice model was obtained.

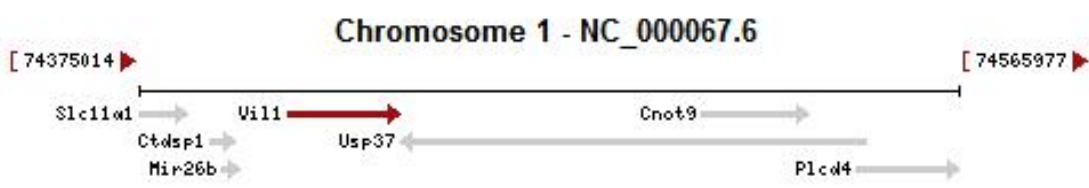
- H11 is located on Chr11. Please take the loci in consideration when breeding the Knock-in mice with other gene modified (e.g., iCre) strains, if the other gene is also on Chr11, it may be extremely hard to get double gene positive homozygotes.
- The scheme is designed according to the genetic information in the existing database. Due to the complex process of gene transcription and translation, it cannot be predicted completely at the present technology level.

Vil1 villin 1 [*Mus musculus* (house mouse)]

Gene ID: 22349, updated on 27-Jan-2018

Summary

Official Symbol	Vil1 provided by MGI
Official Full Name	villin 1 provided by MGI
Primary source	MGI:MGI:98930
See related	Ensembl:ENSMUSG00000026175 Vega:OTTMUSG00000021741
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<i>Mus musculus</i>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Vil
Expression	Biased expression in large intestine adult (RPKM 318.1), small intestine adult (RPKM 235.7) and 4 other tissues See more
Orthologs	human all



[1] Madison BB, Dunbar L, Qiao XT, Braunstein K, Braunstein E, Gumucio DL. *cis* Elements of the Villin Gene Control Expression in Restricted Domains of the Vertical (Crypt) and Horizontal (Duodenum, Cecum) Axes of the Intestine. J Biol Chem. 2002 Sep 6;277(36):33275-83. Epub 2002 Jun 13.

If you have any questions, you are welcome to inquire.
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