

***Nrl-iCre-polyA* TG Strategy**

Designer:

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Reviewer

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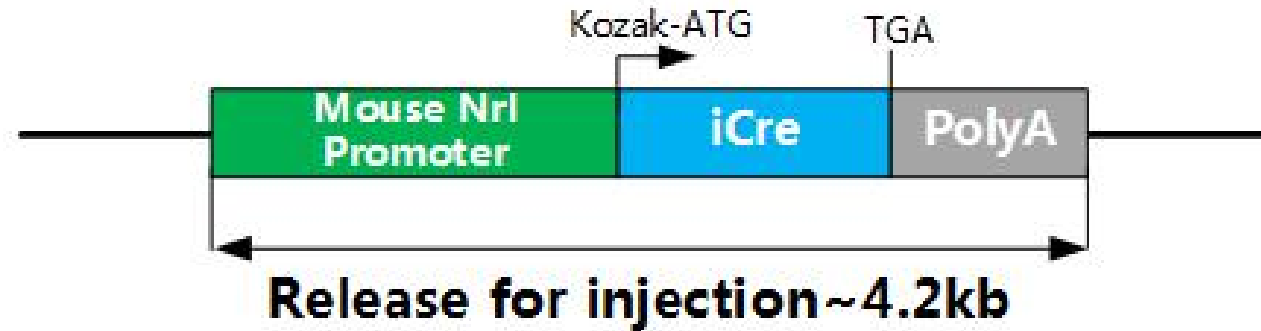
Project Overview

Project Name	<i>Nrl-iCre-polyA</i>
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Project type	TG
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Strain background	C57BL/6J
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This mice model is made by transgenic technology, and the schematic diagram is as follows:



- Kozak : Kozak sequence (GCCGCCACC) will be added before the ATG , in order for the ribosome to recognize the initiation codon.

Summary of Mouse *Nrl* Promoter^[1]

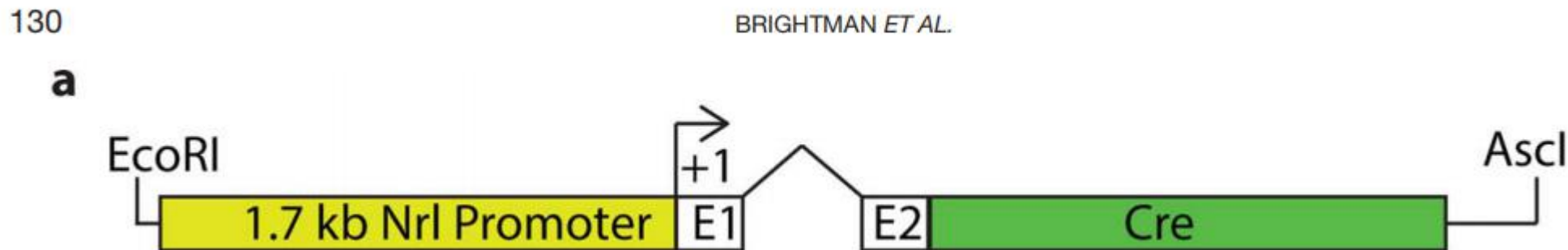


FIG. 1. *Nrl-Cre* is expressed specifically in rods. The 1.7 kb *Nrl* promoter upstream of *Nrl* exons 1 (E1) and 2 (E2) with a 724bp intron was used to drive Cre expression (a). TdTomato fluorescence (red) in *Nrl-Cre*; Ai9 (b,e) and Cre negative, Ai9 (c,f) frozen retinal cross-sections at

genetic protocol. The *Nrlp-EGFP* parent vector from Anand Swaroop included the 1.7 kb *Nrl* promoter and *Nrl* exons 1 and 2 driving expression of EGFP. We replaced EGFP with the *Cre* coding sequence and linearized the transgene cassette using EcoRI and AscI restriction digestion (Fig. 1a) for pronuclear injection.

[1] Brightman DS; Razafsky D; Potter C; Hodzic D; Chen S. 2016. *Nrl-Cre* transgenic mouse mediates loxP recombination in developing rod photoreceptors. *Genesis* 54(3):129-35.

Mouse *Nrl* Promoter Sequence(2594bp)^[1]



GCATGTATCCCTATTCCCTTTACGATCCCTATTGCCCTTTTGTGGATGGTTCCCTGGCCTTACATTTTCCGCTCTCTTTAAGAAAAATAAGCAACAGGTCTTGGTGAAGAGTAACATTTCCATTTCGAATAGTGACTCTATTTCATAAAACCAACGAAACGAAACGAAACGAAACGAAACGAAACAAAAACAAAAACAAAAACCAAGAGACCTGGGCATGGGAGAGTTGTGATATCTGACCTAAGCCTTCTAATGTATGTAGAGGAAGCTTGGATTCCAAATGTCCTCCAAAGCTGGGCATGGTGGTGCCTTTACGCCCTGTACTAGGAAGGCACAAGCAGGTAGATCTATGGGTTCAGGTCAATCTGGTCTACAAAGAGAGTTCTAGGACGGCTAGGGCTACACAGAGAAACCCCTGTTTGTAAAACCAACCAACCAACCAATGTCCTCCAAAGGCATTGAGTTCAAAACCTGTCATTATTGGAAGGTGGTGAAATTTTCAAGAGGTGGGGCCCTGTGGGAAGTCTTCTGGTCTTTGGGTTTTCCCTGAAGGAAGCAAGGCCTAACCCCTCCCTGGTCATCGTTGGTACCCTTGAGGGAAGCAGGAGTCCATCCACTTCCCTTCCCTTTTCTTTTTTTTTTTTTTGTCCCAGTGATAAGGTGAGTAGCTTTCAGTTGTGTCTCGCCATAACACTTGACTACTACAGGCAATACATGATGGGACCAACTGCTCACTGGCTAGGCTCTCCAAGGCAGCAAACCAAGCAAAGCGCTTTCGATTAAGTCAATTACTTCAGGTATGTATTGGAGCAATTATGTTAGTGTTAGTCGGTTTTGTTATTGTGACAAAGTGCCCGAGAAAGATCAAAGGAGGGGAGCCTTCTTTGGGCTAATGGCTTCAGTTTCAGCTGATGGTTGTGGGTGTCTATTGCTTTGGTCCAAAATCTAACATCACGATGGAAAATGTATAGTGAAAGATAAGAGAGAGAAAAGAGAGAGGAAGAGGGGAAGTGAGGTGGGGGAGAAGGAGGATGGAGGGACACAGACAAAATGCACCAATGAACCTAAGGAGAAGATACACCATTCAAACGCATGTTTTTCTAGTTAGGCCAATTCATACTGACAGCCAATTTCAGTATGGATTCTTCAGCTGGTTAGTTATGGATAAGTTAAACCTCTAATAATATCTCAGTGAAAACCTAGCTTTTAAATATACCGGAACCATAGCAGTGATAGAAAACCTAATGTAGGGTGGACACACACACACACACACACAAACACACACTTTGAGACTGGGTGGAAGGTAGGCATCTGTGGACCAGTGGGTCTCAAAACATTAGTGTGTTTCAGAGCTGTTGGAAGGGTTTATTAAACAGCAGCTGTCTATAACCTACTTACTGAGTTTCTGGTTCTGTGAGTTTGAGGTAAAGCAAAAGAATTTGTTTCTTCAAGTTCCCAAGGGGTGATTTCTTAAGACTGTGGAAGCCATTGTTCCAACAGGCAGGGAATACCCTTTAACTTCTGGAGTTTCTTTTATCACAGCACCTATTTAAACAGCTTCAGGCAGGTTTAAACATCTCCTTGGCTAAGTCTACTATCCCTGCTTCGGCCCCCTACTAGGGGGTGACAGCTCTAAGAGGCGTTAGGCGATTAGGCTGAAAATGTAGGTCACACCCCAGCGTCTGGGAATGAGCGAGAGAGGAGAAGAGGGACTGAGACACCGCACGGGAAAAAGTGAGAGGAAGCTGAGGGCTCATGAGGGCATTACAGAAGTGTGGTGGTGATTGGATTTTCAGCTTCTTTTAGTCTCCAGATGAAAGACCAGAGTTGGGATCTCCGCTTTTTCTATCTTCTCTCCAGCTGGGCTGCTTGTCTTCGGGATGGGCTATTAAGAGCGAGTTTCTTCATGGAAGCTCATGGCTTATCTTTCTAATACAGTGACTCTGTGAGGAATAAGACGAGTCAGGGTGAAGGTAGGGCAGGGGCTGAAATGTGAGGATGCTTGAAAAGAAGCAGCAGCCCCAACAAAGCTGGCTGAGGATGGGCTGGGAACGCGTATATGTCTCCTTGACACGGAGTCTTAAAGAGGTTTTGGGTAGTATGTCTGGACTCTTACCACTCTAAGCTTTGAGTGATTGGGCTGAGAATTGTGTTTCCATGGAGGGGTGGTGTGTTGGGGTCAACATGGCTCTCTATATTGGAAACCAAGCTCACAACATAAGCAAGGTCTGATATAGGAAGCTTCTCTGGGGAAGATGCCGTTTGTTTTTTTCCTTTTTTGGAGAACTGATAGCACCTGTCTTTCCTGAGTCCCTGCCCCAGGCCAATGAGATATGCAAATAAGCCCTTCATCTTATTGGATGAGGCTCGAGGACCACAGATGATCTCAGGGAACCAGTCCTTTAAGAGTGCCTCTGGGCTCTGTGCCACAGCCCCCTGTCTCTGAATACAGGGACGACACCAGCCCCTGCTCTATGGAGTATTTAGTCTCCAGGGAAGCTGTGCCTTCTGGTCTTGACAGTGACTACGTCATCTCTGCCATTACATCATCACATAAA

Technical routes

- The *Nrl* promoter^[1] is from references, the length is about 2.6kb.
- In this study, the transgenic vector was constructed in vitro, and transgenic fragments containing *Nrl-iCre-polyA* were micro-injected into the fertilized eggs of C57BL/6J mice, and pcr-positive F0 generation (i.e., founder) mice were obtained.

- Transgenic fragments injected into the prokaryotes will be randomly integrated into the mouse genome. Affected by the insertion site and copy number of transgenic fragments, the expression level of transgenic mice may be different.
- 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.

[1] Brightman DS; Razafsky D; Potter C; Hodzic D; Chen S. 2016. Nrl-Cre transgenic mouse mediates loxP recombination in developing rod photoreceptors. Genesis 54(3):129-35.

如您有任何疑问，欢迎垂询。

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