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tetO-Ptf1a-lacZ - Mouse Strain RES216**Mouse Information**

Common Name:	tetO-Ptf1a-lacZ
MGI Official Name:	Tg(tetO-Ptf1a,lacZ)Macd
Description:	Mice hemi- or homozygous for the transgene are viable, fertile, normal size, and do not display any behavioral abnormalities. Expression of the bicistronic transgene is directed by a heptameric tetO repeat linked to the CMV minimal promoter (collectively the tetracycline-response element). The mice do not express lacZ until a tetracycline-gransactivator (tTA) protein is produced; thereafter Ptf1a and lacZ genes are highly expressed. This mouse was designed to be mated to an apocrine targeted mutant with tTAoff in place of the Ptf1a coding sequence (see BCBC strain M321). The combined genetic alterations provide normal pancreatic development and function until doxycycline-administration render the mice conditionally null of Ptf1a. This approach allows embryonic developmental arrest at desired stages or cessation of gene function in adult mice for the pancreas, cerebellum, retina, dorsal spinal cord and possibly hypothalamus. This transgenic mouse may be useful in studies of pancreatic endocrine/exocrine development and function, diabetes, and certain defects of the CNS. This transgenic can also be bred with other tTA strains for conditional mutation analysis.
Categories:	LacZ Tet


Genetic Alterations**1) BAC or Transgene Insertion**

Type of Vector	Plasmid
Promoter	tetracycline response element with CMV minimal promoter (TRE)
Expressed Gene	bicistronic Pancreas transcription factor 1a -- beta-galactosidase (bicistronic Ptf1a-lacZ - MGI:3655627)
Description of Transgene	A 7.4-Kb bicistronic Ptf1a/lacZ transgene can be activated by tTA from the Ptf1a-tTA locus and subsequently silenced by Dox-administration. The transgene contains nearly the entire Ptf1a transcription unit, retaining the intron and both exons, but with the 5'UTR replaced with that from the <i>Xenopus laevis</i> beta-globin gene (Falcone & Andrews, MCB 11:2656, 1991) and the 3'UTR truncated to eliminate the polyadenylation signal and fused to an optimized IRES (Hale et al., Dev Biol. 286:225, 2005) from the encephalomyocarditis virus (Kim et al., MCB 12:3636, 1992). Downstream of the IRES is a lacZ reporter with a nuclear localization signal and the 3'UTR from the bovine growth hormone gene to provide mRNA stability and a cleavage/polyadenylation site. The transgene is flanked by pairs of the 250-bp cores of the 5'HS4 insulator from the chicken beta-globin gene (Pikaart et al., G&D 12:2852, 1998)
Vector Genbank File	Not provided
Citations	Not provided


Strain Information

Strain Type:	Mixed
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Access Status

 This resource is publicly viewable.


Request this Resource

 Request from a repository

Primary contributor: [MacDonald Lab](#)

Resource Tags

mouse, mouse strain, Ptf1a, tetO, tetO-Ptf1a-lacZ

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Resource History & Actions

Approved on Dec 28, 2007
Last modified on Dec 04, 2009

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No matching resources

Other Consortia

No matching resources

Data courtesy of [dkCOIN](#). Only public resources are displayed.

Chimera/Founder Genetic Background:	B6/D2 F1Hsd
Current Genetic Background:	C57B6/SJL (date recorded: 03/27/2015)
Strain Description:	Not provided

Associated Images

Image 1



Description:

The conceptual nucleotide sequence of the tTA-controllable Pt1a-lacZ transgene. The sequence domains are: RED, flanking pairs of the 250-bp insulator core of the chicken beta-globin 5'HS4; BLUE, the seven repeats of tetO fused to the minimal CMV promoter and transcription start site (+1); GREEN, the Pt1a gene with the translational start and stop sites indicated and its intron (BLACK); CYAN, a modified version of the encephalomyocarditis virus IRES; GREEN, the coding sequence of lacZ; ORANGE, the last few bp of the coding sequence of the bovine growth hormone gene and the 3'UTR including its polyA signal and addition site. See the schematic for the regions confirmed by DNA-sequencing.

Reference:

Not provided

Image 2



Description:

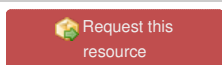
The tTA-controllable Pt1a-lacZ transgene. The order of functional elements are, from the PmeI end: two tandem copies of the the chicken beta-globin 5'HS4 insulator core, the TRE containing 7 repeats of the tTA binding site (tetO) linked to the CMV minimal promoter, Pt1a composed of two exons and an intron, an IRES, the coding sequence of lacZ, the bovine growth hormone 3'UTR including its polyA addition site, and another two copies of the insulator core. The horizontal arrows show the DNA-sequencing runs used to verify the proper sequence of the newly constructed region. The transgene was excised from the recombinant plasmid with PmeI and PacI digestion.

Reference:

Not provided

Repositories

MacDonald Lab



Stock #: tetO Pt1a lacZ Tg
Availability Notes: *Not provided*

Contact Information

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Associated Publications

No publications associated

Comments

There are no comments for this entry.

