B6N.Cg-Tg(Scgb1a1-Scnn1b)6608Bouc/J

Stock No: 030949 | C57BL/6N Scnn1b-Tg

Congenic, Transgenic

AVAILABLE FOR PRE-ORDER

PRE-ORDER NOW

Estimated to begin distribution on: Nov 19, 2018

Also Known As: C57BL/6N Scnn1b-Tg

Scnn1b-transgenic mice backcrossed to the C57BL/6N background demonstrate enhanced neonatal survival as compared to the original mixed background strain (C3H/HeN:C57BL/6N) while still exhibiting a lung phenotype similar to the clinical and pathologic descriptions of cystic fibrosis/bronchitic lung disease, including airway mucus obstruction, chronic neutrophilic inflammation, alveolar space enlargement, and susceptibility to spontaneous bacterial infection during the early neonatal period (PMID 22395316, PMID 27435107, PMID 22419116).

Donating Investigator

Wanda K. O'Neal, Univ. of North Carolina at Chapel Hill

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GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<td>?+pN1</td>
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Tg(Scgb1a1-Scnn1b)6608Bouc

Allele Type
Transgenic (Inserted expressed sequence)

VIEW GENETICS

RESEARCH APPLICATIONS

Internal/Organ Research
Developmental Biology Research
Immunology, Inflammation and Autoimmunity Research

VIEW ALL RESEARCH APPLICATIONS
Mucus clearance is an important airway innate defense mechanism. Airway-targeted overexpression of the epithelial Na⁺ channel alpha subunit (encoded by the sodium channel nonvoltage gated 1, beta subunit (Scnn1b) gene) in mice increases transepithelial Na⁺ absorption and dehydrates the airway surface, reproducing key features of human muco-obstructive lung diseases, including airway mucus obstruction, inflammation, and alveolar-space enlargement.

Scnn1b-transgenic mice over-express the mouse nonvoltage-gated 1 beta, Scnn1b, under the direction of the rat secretoglobin, family 1A, member 1 (uteroglobin; club cell secretory protein) promoter. The donating investigator reports that most hemizygous transgenic mice (80–90%) on the congenic C57BL/6N background survive past postnatal day 14 (PMID 22395316, PMID 27435107, PMID 22419116). To the contrary, hemizygous mice on the congenic C57BL/6J (Stock No. 006438), B6;C3H mixed (Stock No. 005315), and B6C3Fe hybrid (Stock No. 006176) backgrounds at The Jackson Laboratory exhibit an approximately 40% survival rate to weaning age.

The investigators speculate that early neonatal mortality is due to asphyxia caused by proximal airway obstruction. Congenic C57BL/6N Scnn1b-Tg mice maintain the airway muco-obstructive phenotype originally described for the B6;C3H mixed strain (PMID 15077107), and includes airway epithelial Na⁺ hyperabsorption, airway surface dehydration, spontaneous bacterial infection during the early neonatal period, and chronic airway mucus obstruction and inflammation. Both males and females are fertile.
Mammalian Phenotype Terms by Genotype

References

Technical Support

Genotyping Protocols
Standard PCR: Tg(Scgb1a1-Scnn1b)
Genotyping resources and troubleshooting

Breeding Considerations
The donating investigator reports that most hemizygous transgenic mice (80-90%) on this congenic C57BL/6N background survive past postnatal day 14 (PMID 22395316). Both males and females are fertile. For colony maintenance, hemizygous transgenic mice should be bred with C57BL/6NJ (Stock No. 005304) to obtain litters comprising ~50% hemizygous transgenic and ~50% homozygous wild-type littermates. The donating laboratory has mentioned the potential of survival and genotype distribution problems involving hemizygote x hemizygote crosses.

Additional Breeding and Husbandry Support

Mating System
Inbred x Hemizygote
Hemizygote x Inbred

Citation
When using the 007214/JAX-Scnn1b-Tg mouse strain in a publication, please cite the originating article(s) and include JAX stock #030949 in your Materials and Methods section.

Animal Health Reports

Pricing & Availability

Estimated to begin distribution on: Nov 19, 2018

Available for Pre-order

Domestic

International

Pricing effective for USA, Canada and Mexico shipping destinations

<table>
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<th>AGE</th>
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<th>PRICE</th>
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