

STOCK *Atp2b1<sup>tm1Ges</sup>* /Mmjax

MMRRC Stock No: 36714-JAX

 Targeted Mutation

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Administration of KCl or the cholinergic agonist, carbachol, results in increased force in bladder smooth muscle contractility and elevated cytosolic  $Ca^{2+}$  levels in heterozygous mice. This strain may be useful for studying regulation of calcium homeostasis.

#### Donating Investigator

Gary E Shull, University of Cincinnati

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## GENETIC OVERVIEW

Genetic Background

Generation

*Atp2b1<sup>tm1Ges</sup>*

**Alele Type**

Targeted (Null/Knockout)

**Gene Symbol**

*Atp2b1*

**Gene Name**

ATPase, Ca<sup>++</sup> transporting, plasma membrane 1

VIEW GENETICS

## RESEARCH APPLICATIONS

Metabolism Research

Internal/Organ Research

Developmental Biology Research

VIEW ALL RESEARCH APPLICATIONS

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## Details

### Detailed Description

*Atp2b1* or PMCA1 (Ca<sup>++</sup> transporting plasma membrane ATPase) encodes a plasma membrane Ca<sup>2+</sup> - ATPase (PMCA) extrusion pump that is expressed in most tissues. PMCA1 mediates cellular Ca<sup>2+</sup> homeostasis and signaling. Heterozygous mice are viable and fertile. Homozygous mice die during preimplantation. Administration of KCl or the cholinergic agonist, carbachol, results in increased force in bladder smooth muscle contractility and elevated cytosolic Ca<sup>2+</sup> levels in heterozygous mice. This strain may be useful for studying regulation of calcium homeostasis.

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### Development

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### Control Suggestions

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### Selected References

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## Genetics

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### *Atp2b1*<sup>tm1Ges</sup>

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## Disease/Phenotype

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### Disease Terms

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### Research Areas By Phenotype

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### Mammalian Phenotype Terms by Genotype

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### References

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## Technical Support

## Genotyping Protocols

Separated PCR:[Atp2b1alternate2](#)

Separated PCR:[Atp2b1alternate2](#)

[Genotyping resources and troubleshooting](#)

## Breeding Considerations

While maintaining a live colony, these mice are bred as heterozygotes. Mice homozygous for the mutation are not viable.

[Additional Breeding and Husbandry Support](#)

## Citation

When using the STOCK *Atp2b1<sup>tm1Ges</sup>*/Mmjax mouse strain in a publication, please [cite the originating article\(s\)](#) and include MMRRC stock #36714 in your Materials and Methods section.

## Animal Health Reports

[Facility Barrier Level Descriptions](#)

*Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200*

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## THE JACKSON LABORATORY'S GENOTYPE PROMISE

The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. **Therefore, we cannot guarantee a strain's phenotype will meet all expectations.** To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee [breeding performance](#) and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

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## LICENSING INFORMATION

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