**Overview**

**FVB/N-Tg (MMTV-PyVT) 634Mul/J**

**Stock No:** 002374 | MMTV-PyMT

Coisogenic, Transgenic

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**PLACE ORDER**

Live mice available in varying quantities. Ask Customer Service for details.

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Overview
Also Known As: MMTV-PyMT

Hemizygous MMTV-PyMT females develop palpable mammary tumors which metastasize to the lung. These mice have high penetrance of early onset of mammary cancer compared to other mammary tumor models. Male carriers also develop mammary tumors with a later age of onset. MMTV-PyVT transgenic mice express the Polyoma Virus middle T antigen under the direction of the mouse mammary tumor virus promoter/enhancer. This strain can be used as a platform to alter the tumor microenvironment.

Donating Investigator

Dr. William J. Muller, McGill University

RESEARCH APPLICATIONS

Cancer Research
Important Note
This strain is homozygous for the retinal degeneration allele \( Pde6b^{rd1} \).

Detailed Description
The MMTV-PyVT transgene (MMTV-PyMT) includes the mouse mammary tumor virus (MMTV) long terminal repeat upstream of a cDNA sequence encoding the Polyoma Virus middle T antigen (PyVT). Transgenic mice are viable, but show loss of lactational ability coincident with transgene expression. Adenocarcinomas arise in virgin and breeder females as well as males. Tumors are multifocal, highly fibrotic, and involve the entire mammary fat pad. Males also develop adenocarcinoma of the seminal vesicles and hemangiomas. Female carriers develop palpable mammary tumors with a mean latency of 53 days of age, as compared with 92 days in B6.FVB-Tg(MMTV-PyVT)634Mul/LelJ mice (Stock No. 022974). Tumor-bearing females have 80-90% incidence of lung metastasis, a significant increase when compared to that found on the B6 congenic background. Transgene expression is detected at high levels in male and female mammary glands. Lower levels are detected in salivary gland, seminal vesicles, ovaries, and lungs (believed to be the result of pulmonary metastases).

This strain can be used as a platform to alter the tumor microenvironment. Tumor burden and pulmonary metastases have been shown to be reduced after \textit{in vivo} TMP195 treatment by inducing the recruitment and differentiation of highly phagocytic and stimulatory macrophages within tumors. TMP195 treatment combined with chemotherapy regimens or T-cell checkpoint blockade in this model significantly enhances the durability of tumor reduction.

Of note, this transgene is also available on a congenic C57BL/6 genetic background as Stock No. 022974.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Tg(MMTV-PyVT)634Mul
Genotyping Protocols
Standard PCR: Tg(MMTV-PyVT)634Mul
Standard PCR: Tg(MMTV-PyVT)634Mul Probe: Tg(MMTV-PyVT)634Mul Probe

Dietary Information
LabDiet® 5K52 formulation (6% fat)

Breeding Considerations
When maintaining a live colony, FVB/NJ inbred females (Stock No. 001800) may be bred with hemizygous males. The expected coat color from breeding is Albino.

Additional Breeding and Husbandry Support
Mating System
Noncarrier x Hemizygote

Appearance
albino

Related Genotype: Tyr<sup>+</sup>/Tyr<sup>+</sup>

Citation
When using the MMTV-PyMT mouse strain in a publication, please cite the originating article(s) and include JAX stock #002374 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions
AX11 (Maximum)
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