Overview

Also Known As: Apc

The Apc<sup>15lox</sup> floxed allele has <i>loxP</i> sites flanking the adenomatosis polyposis coli gene last coding exon (encoding the functional domains involved in β-catenin regulation, the C-terminal domains needed for microtubule-binding and the polyA sequences). Removal of the floxed sequence results in Apc inactivation and concomitant, constitutive activation of the Wnt/β-catenin signal transduction pathway. These mice may be useful in studying Cre recombinase-inducible intestinal tumorigenesis, as well as Apc deletion in other tissues.

Donating Investigator

Ron M.J.M Smits, Erasmus University Medical Center

Riccardo Fodde, Erasmus Medical Center
GENETIC OVERVIEW

**Genetic Background**

<table>
<thead>
<tr>
<th>Generation</th>
<th>N?+pN1</th>
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**Apc<sup>tm1Rsmi</sup>**

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<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tr>
<td>Targeted (Conditional ready (e.g. floxed), No functional change)</td>
<td>Apc</td>
<td>adenomatosis polyposis coli</td>
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**RESEARCH APPLICATIONS**

- Immunology, Inflammation and Autoimmunity Research
- Developmental Biology Research
- Cancer Research
- Cell Biology Research
- Research Tools

**BASE PRICE**

Starting at:

$255.00 Domestic price for female 4-week

**Details**

**Detailed Description**

*Ap<sub>c</sub>* encodes the adenomatosis polyposis coli protein with diverse cellular functions including cellular proliferation, differentiation, cytoskeleton regulation, migration and apoptosis. APC mutations are commonly associated with intestinal tumorigenesis, and increasingly implicated with phenotypes outside of the intestine.

The *Ap<sub>c</sub><sup>15lox</sup>* floxed allele has *loxP* sites flanking the *Apc* last exon that encodes ~2200 amino acids with all the functional domains involved in β-catenin regulation, the C-terminal domains needed for microtubule-binding and the polyA sequences [Robanus-Maandag et al. 2010 Carcinogenesis 31:946].

Prior to Cre recombinase exposure, mice homozygous for the floxed allele (*Apc<sup>15lox15lox</sup>*) are viable and fertile with no reported abnormalities.
When bred to mice that express Cre recombinase, the resulting offspring may be useful in generating tissue-specific Apc inactivation and concomitant, constitutive activation of the Wnt/β-catenin signal transduction pathway. Specifically, deletion of the Apc last exon results in a truncated protein (ApcΔ15) that is devoid of its main function (β-catenin regulation) and, because the polyA-deficient mRNA is unstable, is expressed at very low levels (~5% of wildtype).

For example, when bred to germline Cre-expressing mice (EIIa-Cre; see Stock No. 003724), the resulting C57BL/6 ApcΔ15/+ mice develop multiple tumors/adenomas in the small intestine at an early age - similar to those reported in small intestine of the C57BL/6J ApcΔ15/+ mice (Stock No. 002020).

In addition, to study tumorigenesis in the large intestine, one may breed ApcΔ15lox mice to animals with cre expression directed more specifically to large intestinal epithelium - for example, CDX2P-NLS Cre transgenic mice (Stock No. 009350). Those resulting mice may be useful in studying familial adenomatous polyposis (FAP)-associated colorectal cancer and sporadic colorectal cancer.
## Pricing & Availability

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

### Domestic

- Pricing effective for USA, Canada and Mexico shipping destinations

### Live Mouse

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## Related Products and Services

| Frozen Mouse Embryo | B6.129P2-Apc<sup>tm1Rsmi</sup>/RfoJ | $2595.00 |

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Email: TechTran@jax.org

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- No