TRPA1 constitutive and conditional knockout mice

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Technology description

The TRPA1 mouse lines provide important animal models for pain research and will be a useful for testing compounds that block TRPA1.

TrpA1 Constituitive Knockout
The Trpa1 consituitive knockout animals were generated by deleting the exons that code for the pore domain of the ion channel. Ablation of these exons renders the ion channel non-functional. In addition to generating the mutation, a human placental alkaline phosphatase (hPLAP) marker was placed under the Trpa1 promoter. The hPLAP marker allows identification of cells that express Trpa1. For studies in pain research, C57Bl/6J mice are used as the standard genetic background. In order for the Trpa1 animals to be used for pain research, the Trpa1 constituitive knockout animals were backcrossed to the C57Bl/6J lines for over 10 generations resulting in a Trpa1 knockout animal that is essentially in the C57Bl/6J genetic background. This mouse line provides an important animal model for pain research and will be a useful reagent testing compounds that block TRPA1.
TRPA1 Conditional Knockout
Trpa1 conditional knockout animals were generated by flanking the exons that code for the pore domain of the ion channel by loxP sites and selected by presence of a drug resistance cassette. The selection cassette was subsequently removed to produce the Trpa1 conditional knockout allele. Conditional knockout animals were backcrossed to C57Bl/6J for 10 generations. After backcrossing, these animals are essentially in a C57Bl/6J genetic background. Since Trpa1 is in both the dorsal root ganglia neurons and keratinocytes, the conditional knockout animals serve as a useful tool for cell-type specific ablation of experiments when used in conjunction with Cre/loxP technology.

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