Nlrp3^{A350VneoR} Mouse Model

Nlrp3^{A350VneoR} mice (JAX# 017969) contain a floxed neomycin cassette (neoR) in opposite orientation to a point mutation in exon 3 of the cryopyrin (Nlrp3) gene. The mutation results in the A350V missense mutation, that corresponds to the human amino acid 352. When animals are bred to Cre recombinase expressing mice, neoR is deleted and the mutant Nlrp3^{A350V} gene is expressed in all *cre*-containing tissues.

Animals can be used to study autoinflammatory diseases also known as cryopyrin-associated periodic syndromes (CAPS) like Muckle-Wells syndrome, familial cold autoinflammatory syndrome (FCAS) or neonatal-onset multisystem inflammatory disease (NOMID).

Animals' phenotype strongly depends on the promoter of the Cre recombinase mouse model utilized for crossbreeding. Using a tamoxifen-inducible promoter with Cre recombinase fused to the estrogen responsive protein allows variable Nlrp3^{A350V} expression.
When Nlrp3^{A350V} is expressed in adult animals, the following phenotype can be observed:

- **Steady weight loss of 25% within 30 days**
- **Dermatitis with erythema and occasional ulceration**
- **Neutrophilic infiltrates in the spleen with increased levels of GR-1/CD11b double-positive cells**
- **Peripheral blood leukocytosis (neutrophilia)**
- **Lymphopenia**
- **Mild anemia**
- **Thrombocytosis**
- **Increased serum IL-6 levels**
- **Variable IL-1β and TNF-α levels**

Brydges SD et al.. 2009. Inflammasome-mediated disease animal models reveal roles for innate but not adaptive immunity. Immunity 30(6):875-87.

McGeough et al., 2012. Cutting edge: IL-6 is a marker of inflammation with no direct role in inflammasome-mediated mouse models. J Immunol. 2012 Sep 15;189(6):2707-11.

QPS Austria
Parkring 12, 8074 Grambach, Austria
Email office-austria@qps.com
Website www.qpsneuro.com
Tel +43 316 258 111

QPS LLC
3 Innovation Way, Suite 240
Newark, DE 19711, USA
Email info@qps.com
Website www.qps.com