

Transgenic Mouse Model Expressing Human POP2

An Inducible In Vivo Platform for Studying Inflammasome Regulation and Inflammatory Disease Mechanisms

Background:

Inflammation is a key biological response to infection or injury, but when unregulated, it contributes to numerous chronic and autoimmune diseases, including rheumatoid arthritis, lupus, multiple sclerosis, and inflammatory bowel disease. Central to this process is the inflammasome—a multi-protein complex that regulates the activation of inflammatory responses by controlling cytokine production and programmed cell death (pyroptosis). One important regulatory component of inflammasome activity is pyrin

domain only protein 2 (POP2), which acts as a natural inhibitor of inflammasome assembly by interfering with protein-protein interactions. While in vitro studies have shed light on POP2's function, the lack of an appropriate in vivo model has limited our understanding of its physiological role and potential as a therapeutic target.



Source: <https://stock.adobe.com/search?k=dna>.

Technology:

This patented technology describes the development of a transgenic mouse model that expresses human POP2 (pyrin domain only protein 2) under the control of an inducible promoter. These mice provide a powerful in vivo system to study the role of POP2 in regulating inflammasome activity, cytokine production, and inflammation under both normal and disease conditions. By enabling researchers to assess how human POP2 expression affects immune responses in a living organism, this model fills a critical gap in preclinical research for inflammation-related diseases and therapies.

Intellectual Property:

US9578859B2

Technology Readiness:

Ready for Licensing

Advantages:

- Human POP2 expression in vivo
- Enables inflammasome regulation studies
- Useful for anti-inflammatory drug testing
- Inducible, controlled gene expression

Applications:

- Drug screening and validation
- Inflammation and autoimmunity research
- Disease model development
- Host-pathogen interaction studies
- Biomarker identification

For inquiries please contact

techtransfer@amc.edu
Office for Translational Research
Albany Medical College
Albany, NY

