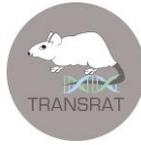


“TransRat” Consortium



What we offer:

Transgenic rats expressing genetically engineered fluorescent calcium-sensor proteins
(GCaMP2 and RGECO1)

Background:

In the drug discovery workflow early prediction of selectivity and toxicity of the potential drug candidates requires the evaluation of both in vitro and in vivo effects. Among those, cellular calcium homeostasis and signaling are important factors to be examined, being key drug targets, as well as important side effect indicators. Although mouse models are already available for such purposes, in the laboratory rat, a preferred animal model for most physiology, pharmacology and toxicology studies, a stable transgenic model for calcium studies has not been available.

What we offer – the palette of transgenic rat lines:

Using the *Sleeping Beauty* transposon system we have generated stable transgenic rat lines expressing the genetically engineered fluorescent calcium-indicator proteins: the green fluorescent GCaMP2 and the red fluorescent RGECO1, in a tissue specific manner. Homozygous rats containing two transgene copies at well-defined insertion sites and showing high level indicator expression were selected. We could show a normal karyotype and that transgene expression has no effect on tissue development.

Currently available rat lines:

1. **SB-CAG*-GCaMP2** rat line: using a “double-feature” promoter (Orban, TI et al, *Stem Cells*, 2009), these rats express the transgene in **cardiac**, **hepatic**, and **kidney** tissues, as well as in **certain leukocytes**. For further references, see: Szabenyi, K et al, *J Am Soc Nephrol*, 2015 ; Szabenyi, K et al, *Sci Rep*, 2015.

2. **SB-GFAP-RGECO1 rat line:** these rats express the red fluorescent calcium sensor in **macroglia** cells of the brain.

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Potential users (not exclusively) are:

- *Pharmaceutical companies, working on **drug discovery and testing***
- *Companies or medical laboratories, interested in **toxicological studies***
- *Research laboratories, investigating **calcium homeostasis and signaling***
- *Research laboratories, having **transgenic rat disease models related to calcium homeostasis***

Interested?

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