CRISPR Part 3: Tags and Reporters

Expressing genes with tags or reporters is useful for studying localization and cellular trafficking, as well as for cell sorting and protein purification applications. Introducing a tag or reporter into an endogenous mouse gene results in expression of the tag or reporter along with the targeted mouse gene, and this can be designed as a gene fusion or coexpression knockin. With a coexpression knockin design, the reporter protein is expressed along with the protein product from the targeted mouse gene, but they are produced as separate proteins.

At ingenious, we have generated hundreds of customized tag and reporter gene knockin mouse models. With CRISPR technology, we are able to provide you with guaranteed germline transmission mouse models faster and at better costs than ever before.

Here are some of the fusion knockin model types that are most frequently requested by our clients:

1) Tags - HA, FLAG, and others.
2) Reporters - GFP, mCherry, tdTomato, YFP, BFP, luciferase, and many more.

To discuss your ideas for your next mouse model, email us to get in touch with our scientific project designers.

Publications

Congratulations to our client Dr. Jia Bei Wang for her recent publication in *Journal of Neuroscience*. Dr. Wang worked with ingenious to generate a point mutation mouse model of the mu opioid receptor (MOR) to investigate what role the phosphorylation site at T394 might play in the development of opioid tolerance and dependence in mice. Mutation of this site results in blocked opioid tolerance, and an increased brain dopamine response to
Based on these findings, T394 may be utilized as a drug target to treat opioid addiction.

Testimonials

"Our project manager did an outstanding job and has provided us with excellent customer service. Her availability to clarify issues has been nothing short of fantastic. I have recommended ingenious to others. Look forward for further collaboration on other projects."

- Hamid M. Said, PhD, PharmD
University of California, Irvine

Did You Know . . .

. . .that genes regulate our sleep? Using genetic screening for sleep defects in mice, investigators from the University of Tsukuba, Japan and the University of Texas (UT) Southwestern Medical Center have just identified the first two core genes that regulate the amount of deep sleep and dreaming. Mutations in the Sik3 kinase gene caused mice to require more sleep and respond to sleep deprivation more intensively, while mutations in the Nalcn gene result in reduced REM sleep. The discovery of these essential genes is just the beginning of a long journey into the mysteries of sleep regulation. Read more here.