

Fastest knockins utilizing ingenious' Rapid-Rosa26™ technology

To advance the process of creating targeted Rosa26 knockins, ingenious has developed the Rapid-Rosa26™ system. Our **proven reagents and protocols** allow for the fastest creation of new lines, **delivering your model in the shortest time and lowest cost.**

Rapid Rosa26™ Targeting Provides:

- **All the advantages of Rosa26-targeted transgenics, plus:**
- **Timelines that fit your plans and pricing that fits your budget.**
- **Reliable results with design flexibility.**
- **From small inserts to complex designs up to 25kb.**

Transgenic Mouse Models revolutionized biological research when robust methods for their creation became available in the late 1970s and early 1980s. One efficient and widely-used technique is the direct injection of linear DNA molecules into fertilized eggs, leading to transgene integration at a random location in the embryo's genome. Early experiments showed that an integrated DNA construct could contain both the coding portion of a gene as well as regulatory sequences, and that those regulatory sequences could remain functional.

Soon new transgenic lines with tissue-specific expression of transgenes became invaluable research tools. However, it was also noticed immediately that a transgene's expression could vary widely depending on where and how it integrated into the genome. The uncertain results of the random transgenic approach are not a problem when transgenics are made by targeted insertion at the well-characterized "safe harbor" Rosa26 locus. And with ingenious' Rapid Rosa26™ technology, the targeted transgenic method becomes more streamlined.

**Next- Compare pronuclear injection, traditional Rosa26 targeting,
and ingenious' Rapid Rosa26™ approach**

Comparative Chart

	Random transgenic knockin	Rosa26 Knockin	ingenious' Rapid Rosa26™ Targeting
Transgene expression	<p>Unpredictable.</p> <p>Surrounding genomic region may affect transgene expression.</p>	<p>Predictable and reliable.</p> <p>Expression level not affected by genomic region.</p>	<p>Predictable and reliable.</p> <p>Expression level not affected by genomic region.</p>
How long before line is ready to use?	<p>Unknown.</p> <p>Multiple lines must be made and tested to confirm they have the desired expression pattern.</p>	<p>10-12 months.</p>	<p>8-10 months.</p> <p>With ready-to-go reagents timeline is shortened.</p>
Unpredictable effects	<p>Inserted sequence may alter or disrupt expression of other genes depending on where it has integrated.</p>	<p>None.</p>	<p>None.</p>
Advantages	<p>Lowest cost.</p>	<p>Reliable and predictable results.</p>	<p>Reliable and predictable results with shorter timeline than standard Rosa26 targeting, and guaranteed delivery.</p>

Additional designs using Rapid-Rosa26™ technology:

- **Drug-inducible control over cDNA expression.**
 - **Controlled activation and de-activation of overexpression.**
- **Complex models with multiple elements.**
 - **Express your cDNA along with other genes such as fluorescent reporters.**
- **Conditional expression of human cDNA sequences.**

Featured Publication:

Daniels BP, Snyder AG, Olsen TM, Orozco S, Oguin TH, 3rd, Tait SW, Martinez J, Gale M, Jr., Loo YM, Oberst A. 2017. RIPK3 Restricts Viral Pathogenesis via Cell Death-Independent Neuroinflammation. *Cell* **169**: 301-313 e11. Model Type: Rosa26 insertion of conditionally-regulated cDNA, including FLAG and mCherry reporter.

About ingenious targeting laboratory

ingenious targeting laboratory (ingenious) is a leading global provider of custom genetically modified mouse, rat, and rabbit models. As one of the very first mouse gene targeting companies, our trusted service is built on two decades' worth of successful animal model creation for investigators, organizations, and companies. Our models have been published in hundreds of journals including *Science*, *Nature*, and *Cell*, making us one of the most validated and trusted production companies in the industry.

Contact us today. One of our scientific consultants can answer your questions and begin strategizing your custom mouse, rat, or rabbit model project.

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