neurotrophic factor (Ndnf) gene. These mice retain endogenous Ndnf expression and may be used to generate conditional mutations for studying gain-or-loss of function, fate mapping and/or circuit dissection of NDNF+ cell populations.

Donating Investigator

Ivo Spiegel, Weizmann Institute of Science
**Ndnf-IRES-FlpO** knock-in mice have a FlpO recombinase gene inserted into the 3' UTR in exon 4 of the neuron-derived neurotrophic factor (*Ndnf*) gene. *Ndnf* encodes a protein involved in neuron migration, growth and survival as well as neurite outgrowth. Specifically, expression is evident in neocortical layer 1 (L1) GABAergic interneurons (INs) in the adult mouse brain, and becomes restricted to GABAergic interneurons only during the third postnatal week. Mice that are homozygous for this knock-in allele are viable and fertile. When *Ndnf-IRES-FlpO* mice are bred with mice containing *frt*-flanked sequence(s), FlpO-mediated recombination will result in deletion of the *frt*-flanked sequence(s) in the FlpO-expressing cells of the offspring.

For example, when crossed to RC::FLTG reporter mice (Stock No. 007909) tdTomato-labeled neurons are found primarily in neocortical L1, with expression also seen in blood vessels throughout the cortex.

*Ndnf-IRES-FlpO* knock-in mice can also be used in combination with AAV-constructs that drive gene expression via neuron-specific promoters (e.g. hSyn1-promoter) when injected after P16, such AAV constructs selectively label NDNF interneurons in layer 1 without labeling blood vessels.

Of note, strain expressing cre recombinase from the same promoter are available:
- **NDNF-Cre** knock-in mice from Stock No. 030757 express a constitutively active cre recombinase from the *Ndnf* promoter.
- **NDNF-RES2-dgCre-D** knock-in mice from Stock No. 028536 express a destabilized EGFP/Cre fusion gene (dgCre) driven by the *Ndnf* promoter.
- **NDNF-IRES-CreERT2** knock-in mice from Stock No. 034875 express a tamoxifen-inducible cre recombinase from the *Ndnf* promoter.

**Development**

**Control Suggestions**

**Selected References**

**Genetics**
Genotyping Protocols
Separated PCR: \textit{Ndnf Alternate 2}
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, homozygous mice may be bred together.

Additional Breeding and Husbandry Support
Mating System
Heterozygote x Heterozygote

Citation
When using the Ndnf-IRES-FlpO mouse strain in a publication, please cite the originating article(s) and include JAX stock #034876 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

\textbullet{ FGB29 (Standard) }
Live mice available in varying quantities. Ask Customer Service for details.

### Pricing & Availability

Available

#### Domestic

Pricing effective for USA, Canada and Mexico shipping destinations

<table>
<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Heterozygous for Ndnftm1.1(flpo)spgl</td>
<td>$255.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Heterozygous for Ndnftm1.1(flpo)spgl</td>
<td>$255.00</td>
</tr>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Homozygous for Ndnftm1.1(flpo)spgl</td>
<td>$255.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Ndnftm1.1(flpo)spgl</td>
<td>$255.00</td>
</tr>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Wild-type for Ndnftm1.1(flpo)spgl</td>
<td>$78.51</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Wild-type for Ndnftm1.1(flpo)spgl</td>
<td>$78.51</td>
</tr>
</tbody>
</table>

#### BREEDER PAIR

<table>
<thead>
<tr>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Heterozygous for Ndnftm1.1(flpo)spgl</td>
<td>$510.00</td>
</tr>
<tr>
<td>Male</td>
<td>Heterozygous for Ndnftm1.1(flpo)spgl</td>
<td></td>
</tr>
</tbody>
</table>

### PAYMENT TERMS AND CONDITIONS

Terms are granted by individual review and stated on the customer invoice(s) and account statement. These transactions are payable in U.S. currency within the granted terms. Payment for services, products, shipping containers, and shipping costs that are rendered are expected within the payment terms indicated on the invoice or stated by contract. Invoices and account balances in arrears of stated terms may result in The Jackson Laboratory pursuing collection activities including but not limited to outside agencies and court filings.

### THE JACKSON LABORATORY'S GENOTYPE PROMISE

The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. Therefore, we cannot guarantee a strain’s phenotype will meet all expectations. To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee breeding performance and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

### Terms Of Use

TERMS OF USE
Related Strains

All

By Allele
By Gene
By Collection