

Nomenclature Guidelines for Naming Genetically Modified Mouse Strains and ES Cell Lines

The BCBC Coordinating Center has prepared this document to assist with the naming of genetically-modified mouse strains.

1. Obtain a laboratory code:

A key feature of mouse nomenclature is the Laboratory Registration Code or Laboratory code (ILAR), which is usually 2-4 letters that identifies a particular institute, laboratory or investigator that contributed the model strain.

For example, consider the strain name: Gck^{tm3Mgn}

The ILAR code is “Mgn”, which in this case is the code for Mark A. Magnuson.

An ILAR code can be obtained, or retrieved if one exists, at <http://dels.nas.edu/global/ilar/Lab-Codes>.

2. Determine the official symbol of the mutated gene:

The official gene symbol of the target gene may be different from what is commonly used. You must use the “official gene symbol,” available from <http://www.ncbi.nlm.nih.gov/gene>.

For example, the gene symbol of *Neurogenin 3* is ***Neurog3*** not *Ngn3* (*Ngn3* is a synonym of *Neurog3*).

3. What type of genetic alteration was or will be done on this animal?

Within the scope of the BCBC, the most common types of genetic alterations are based on gene targeting and transgenic approaches.

- a) **Targeted mutation:** conventional knockout (including knock-in with reporter genes) and point mutations.

Example 1:

Name: Gck^{tm2Mgn}

Meaning: Second targeted mutation line (**tm2**) of glucokinase (**Gck**) made by Mark Magnuson (**Mgn**).

Example 2:

Name: Neurog3^{tm1Ggr}

Meaning: First targeted mutation line (**tm1**) of neurogenin3 (**Neurog3**) made by Gerard Gradwohl (**Ggr**)

b) **Transgene insertion:** conventional transgenic mice.

Example 1:

Name: Tg(Pdx1-Neurog3-ER)**1**Agb

Meaning: Transgenic mouse line (**Tg**) carrying Neurog3-ER transgene driven by Pdx1 promoter (**Pdx1-Neurog3-ER**). This is the mouse line number **1** of this transgenic mouse kind (**1**) created by Anne Grapin-Botton (**Agb**) by insertion.

Example 2:

Name: Tg(Neurog3-IRES-NLS-LacZ)**1**Ggr

Meaning: Transgenic mouse line (**Tg**) carrying NLS-LacZ transgene driven by Neurog3 promoter (**Neurog3-IRES-NLS-LacZ**). This is the mouse line number **1** of this transgenic mouse kind (**1**) created by Gerard Gradwohl (**Ggr**) by insertion.

Note: The line numbers (ex. **1**, **2**, or.....**12**) do not have to represent a sequential progression. It can be those used by your lab since there are normally more than one line mouse carrying the same transgene made during the process. However, not all lines created are validated or maintained in the lab.

Jackson Laboratories offers an online tutorial on understanding nomenclature for naming a mouse. It provides detailed information on how names are structured and is available at <http://jaxmice.jax.org/support/nomenclature/tutorial.html>.

4. Mouse strain information: (optional)

If you know the strain type of your animals either those that already exist or those to be produced, you also can add this information to the name. (For the approved abbreviations of common mouse strains please see Table 1).

Example 1:

Name: 129- Tg(Pax4-Cre,GFP)1Pgr

Meaning: Transgenic mouse line (Tg) carrying a Pax4 driven Cre and GFP (Pax4-Cre,GFP). This mouse line is the first (1) such kind made by Peter Gruss (Pgr). The founder genetic background was 129Sv as well as the strain genetic background.

Example 2:

Name: B6.129S6- Gck^{tm2Mgn}

Meaning: Second targeted mutation line (tm2) of glucokinase (Gck) was introduced via gene knock-in by Mark Magnuson (Mgn). Founder genetic background: 129S6/SvEvTac; Strain genetic background: C57BL/6J

There are numerous subtleties in nomenclature that are not covered here. This is a simple guide for you to start. After you created a new allele, we would like to encourage you to submit it to MGI using their online submission form found at <http://www.informatics.jax.org/submit.shtml>. The information will be kept confidential until publication if requested.

Table 1. Approved abbreviations for common mouse strains

* There are several subtypes of 129 strains. Please see http://www.informatics.jax.org/mgihome/nomen/strain_129.shtml

Abbreviation	Mouse strains
129	129 strains*
A	A strains
AK	AKR strains
B	C57BL
B6	C57BL/6 strains
B10	C57BL/10 strains
BR	C57BR/CD
C	BALB/c strains
C3	C3H strains
CB	CBA
D1	DBA/1 strains
D2	DBA/2 strains
HR	HRS/J
L	C57L/J
R3	RIIS/J
J	SJL
SW	SWR

Source:

<http://www.informatics.jax.org/mgihome/nomen/strains.shtml#nois>