Genotyping protocol

Conditional overexpression of Cdx2 under the Rosa26 endogenous promoter

IR00003911 / K716

(ICS internal reference)

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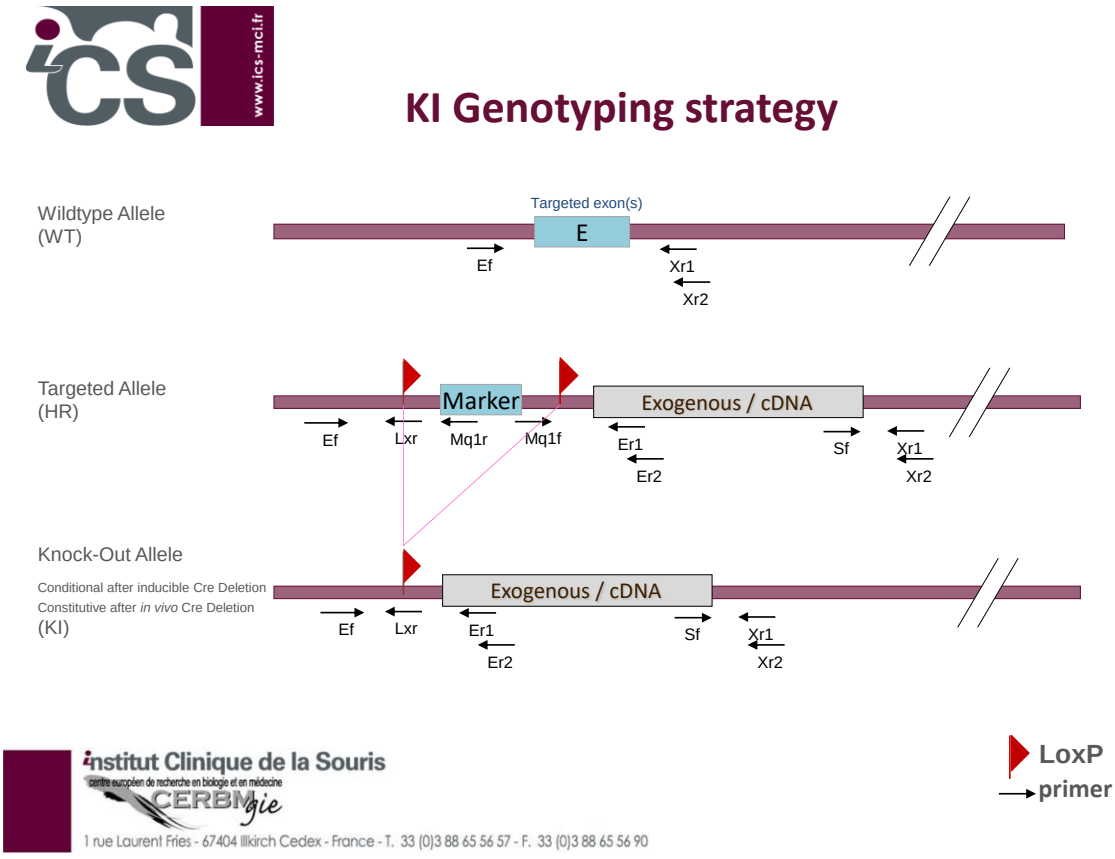
1. Genotyping protocol and data

This section describes the condition used at the Mouse Clinical Institute (ICS) to genotype your **Cdx2 conditionnel dans Rosa** Knockin (KI) project.

1.1. Genotyping strategy

The map below describes the position of the primers used for genotyping for each possible allele.



Sequence of primers used for genotyping:

Position	Sequence
Ef	CTTTCTGGGAGTTCTCTGCTGCCTC
Er1	GAGGTAGCTCACGTAAAGCTTGTCG
Er2	CACGTGGTAACCGCCGTAGTC
Lxr	CGAAGTTATATTAAGGGTTCCGGATCC
Mq1f	GTGGTTTGTCCAAACTCATCA
Mq1r	TGCTAAAGCGCATGCTCCAGACTGC
Sf	CAGCCTCAGCCAGGTCCTCTG
Xr1	CGAAAATCTGTGGGAAGTCTTGTCC
Xr2	CAGATGACTACCTATCCTCCCATTTTC

PCR fragments expected size (bp):

Region analyzed	Position on the primer *(see the map above)*	Targeted allele (L2)	KI allele (L-)	WildType allele (WT)
WildType allele specific PCR	Ef / Xr1	4463*	1794*	222
Excision of the selection marker	Ef / Er1	3093*	424**	
5' part of the selection marker	Ef / Mq1r	402		
3' part of the selection marker (with DMSO)	Mq1f / Er2	325		
cDNA 3' (with DMSO)	Sf / Xr2	647	647	
LoxP specific PCR	Ef / Lxr	298	298	

*: this PCR product will not be observed using our PCR genotyping conditions (see description below)
**: this PCR is only verified if mice are generated
---: no Amplicon should be obtained

1.2. PCR protocol

This section describes the composition of the mix and cycling conditions used for genotyping.

Reagents:	Volume:
- FastStart PCR Master (Roche)	7.5µl
- DNA (50ng/µl)	1.5µl
- 5' primer (100 µM)	0.06µl
- 3' primer (100 µM)	0.06µl
- Sterile H_2O	up to 15 µl

Cycling conditions:

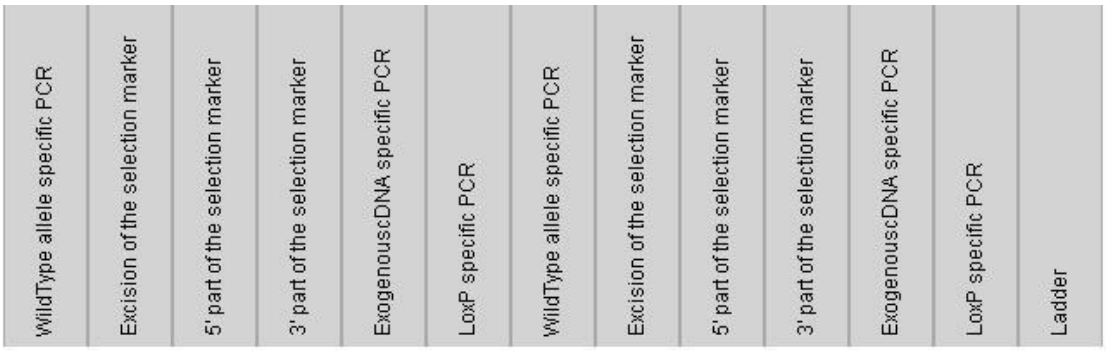
Temp	Time	#Cycles
95°C	4min	1
94°C	30s	
62°C	30s	34
72°C	1min	
72°C	7min	1
20°C	5min	1

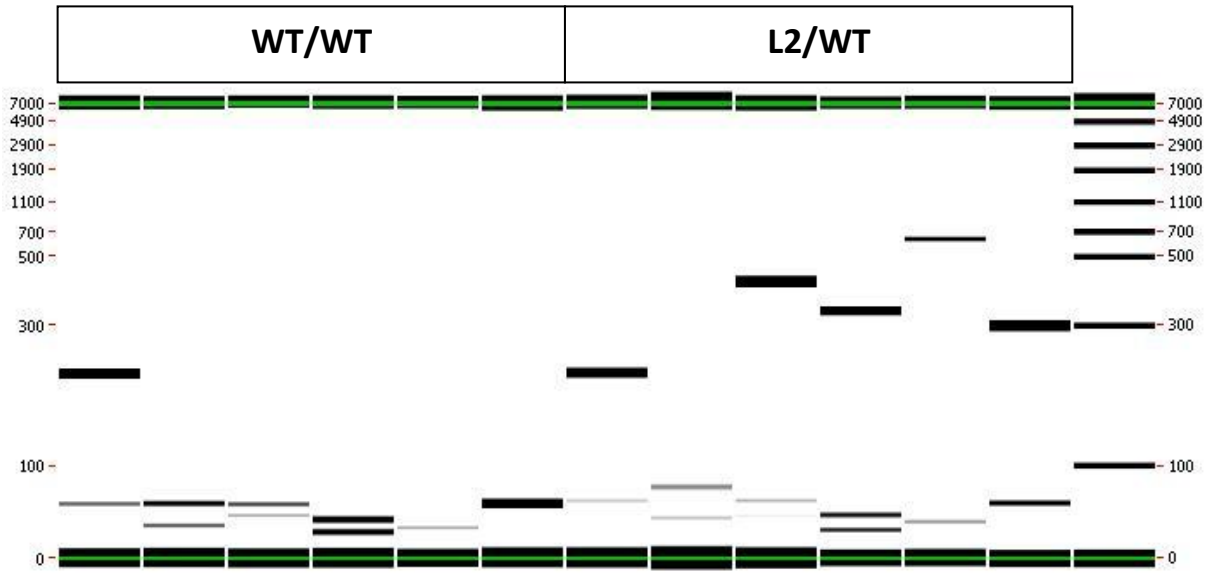
NB: These PCR conditions have been optimized for high-throughput genotyping. Adaptation to small-scale may be required.

1.3. Picture of genotyping with various alleles

Analysis of PCR products pattern was not done by gel electrophoresis but using LabChip® 90 microfluidic apparatus. PCR products were run on the HT DNA 5K LabChip® 90 Assay Kit.

Representative genotyping picture





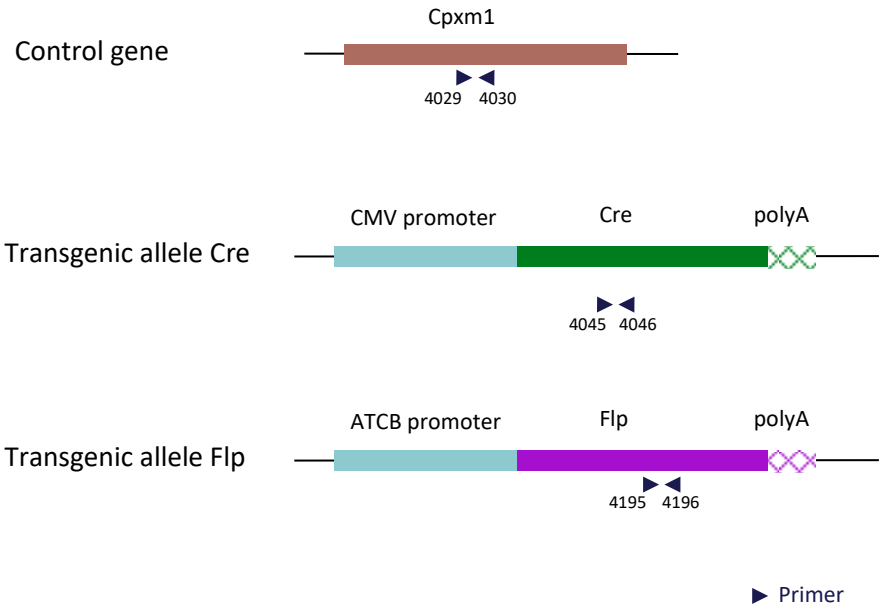
Note that as this technology is more sensitive than gel analysis, non specific signals and/or primer dimers may be visible on the picture.

2. Cre and Flp genotyping method

The protocol used to segregate the cre and/or flp transgene is indicated below.
Detection of cre transgene and flp transgene is done using a multiplex assay: primer pairs were designed for each gene and for a positive control (Cpxm1 gene).

2.1. Cre and Flp genotyping

Schematic representation of the genotyping strategy



Sequence of primers used for genotyping:

Primers	Sequence
4029	ACTGGGATCTTCGAACTCTTTGGAC
4030	GATGTTGGGGCACTGCTCATTCACC
4045	CCATCTGCCACCAGCCAG
4046	TCGCCATCTTCCAGCAGG
4195	TCTTTAGCGCAAGGGGTAGGATCG
4196	GTCCTGGCCACGGCAGAAGC

PCR fragments expected size (bp):

Primer pair	4045-4046	4195-4196	4029-4030
Region analyzed	Middle part of Cre transgene	Middle part of Flp transgene	Cpxm1 control gene
Control gene	/	/	397
Tg allele	281	328	/

2.2. PCR Protocol

This section describes the composition of the mix and cycling conditions used for genotyping.

Reagents	Volume
FastStart PCR Master (Roche)	7.5µl
DNA (50ng/µl)	1.5µl
5' primer (100 µM)	0.05µl
3' primer (100 µM)	0.05µl
Sterile H_2O	up to 15 µl

Cycling conditions are identical to those described in chapter 1.2