



Protocol for genotyping LE-Tg(DAT-iCre)⁶O_{ttc} transgenic rats November 28, 2017

Genomic DNA Preparation by Macherey-Nagel Tissue Spin Columns

Using this kit according to the manufacturer's protocol is the preferred way for preparing genomic DNA at OTTC when it is intended for ddPCR (i.e. copy-number quantification). Typically, 10 to 90 ng of genomic DNA are used in an 11-25uL PCR reaction.

Genomic DNA Preparation by the "Hot Shot" method

This method was adapted by NIDA-OTTC from the protocol originally described in *Biotechniques* 29(1), 52-54 (2000). It has been used successfully with ear punches and tail clips of rats. This method is quicker and more cost-effective when compared to the MN Tissue Spin columns, but in our experience, it does not produce templates that are reliable for ddPCR and quantitative analysis. Typically, 1uL of template is sufficient for an 11-25uL PCR reaction.

Place the biopsy sample in 1.5ml microfuge tube.

Add 300 microliters of 50mM NaOH

Incubate tubes at 95C for 60 minutes.

Vortex tubes on medium power setting for 5 seconds.

Quick spin the tubes to bring down the condensation.

Neutralize each sample by adding 30 microliters of 1M Tris-HCl (pH 8).

Vortex tubes on medium power setting for 5 seconds.

Quick spin the tubes to bring down the condensation.

Debris (the "undigested" remnant of sample) may remain visible at the bottom of the tube. This is OK, but be sure to take only from the supernatant when setting the PCR reaction.

Use 1uL of this supernatant in a PCR reaction (11uL – 25uL final volume).

LE-Tg(DAT-iCre)⁶O_{ttc}

Primer Name

DAT F74326

iCre R173

Primer Sequence (5' to 3')

CGCACAAGCTGGGAGCTAATGTGAA

CTTCCAGGTGTGTTTCAGAGAAG

These oligos produce a 481 bp amplicon spanning the 5' end of the DAT-iCre using with OneTaq polymerase with 68oC annealing.

Primer Name

iCre F738

DAT R74923

Primer Sequence (5' to 3')

GTTCTGCCGGGTCAGAAAGAATGGT

GCACAGGTAGGGAAACCTCCAGACA

These oligos produce an 822 bp amplicon spanning the 3' end of the DAT-iCre insert, using with OneTaq polymerase with 66-68oC annealing.

This protocol was updated on 11-28-2017 by CR.

Any questions regarding protocol, contact nidatransgenicprojects@mail.nih.gov.