

PCSK1 AD Genotyping Strategy

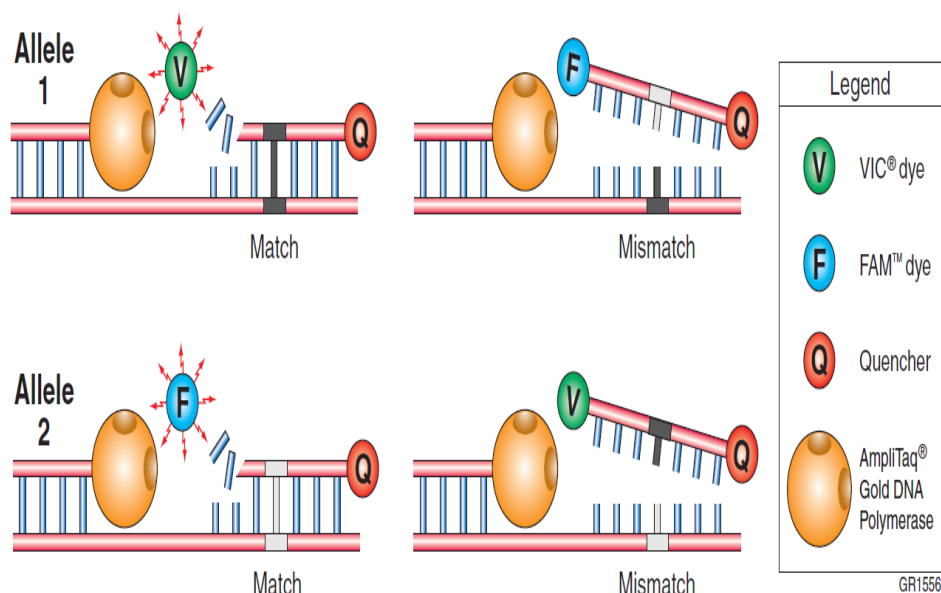
Introduction

An Allelic Discrimination assay can be used to detect two possible variants of a Single Nucleotide Polymorphism (SNP). It is a multiplexed assay (with two primer/probe pairs) with data being collected at the completion of the PCR process.

Two Taqman probes are used in the assay, one detector matching the WT (allele 1) and the other matching the Mutant (allele 2)

The Analysis software produces 2 genotypes:

- Homozygotes (samples having only allele 1 or allele 2)
- Heterozygotes (samples having both allele 1 and allele 2)



Information about running an Allelic Discrimination assay can be found here:

http://www3.appliedbiosystems.com/cms/groups/mcb_support/documents/generaldocuments/cms_042114.pdf

Assay set up

Mouse ear clips arrive for genotyping in task plates.

To retrieve sample IDs and well locations - log into AnonymMus.

<https://anonymus.har.mrc.ac.uk/anonymus/core/Login>



Group: Diabetes
Mutation type: SNP
Mutant allele: T
WT allele: G
Assay Type: Allelic discrimination

Fragment sequence

Ataacctgaaggctcactgctgtgctcactgcttctccccctgctaagagtagacttttgctgtagtgaggaaac
acttgtctcctcagtgaggcaatcttcttctcctaggctgggagtttgagttggggccaggcaaaaacatcactatga
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GTTCAAAAAGACTCAGCATTGGATCTCTTCAATGATCCAATGTGGAATCAGCAGTGGTACTTGtaagtactgac
aggaccatttaggatctaggctctttatacatcatcttcatgggtgatctatctgtctgtgtgtattagagtttc
tagagaacagaatttatagaaaaatctatttatcatctacatctctctatatatttatcatatataaaggggattta
ttagaatggcttatgaactgtgttccagctatcccagacaatggccatctaccaatgaaagggtccagggaaccaat
attgttcatgag

Primers and Probes

Forward primer TGAAGAGATCCAATGCTGAGTCT
Reverse primer GGGTGAAGGGTCTCAAAGATAGAG
Allele 1 probe (FAM-Labelled) AGCCACGTCAACTATAAA
Allele 2 probe (TET-Labelled) CCCACGTCACCTATAAA

qPCR master mix

ABI GTX Taqman master mix	5µl
Assay (Probes 5µM each & Primers 15µM each) 20uM	2µl
ddH ₂ O	0.5µl
DNA (1/10 dilution of ABI Sample-to-SNP prep)	2.5µl

No need to run the samples in duplicates.



7500 Settings for running Allele Discrimination Assay are as shown below

How do you want to identify this experiment?

* Experiment Name:

Barcode (Optional):

User Name (Optional):

Comments (Optional):

* Which instrument are you using to run the experiment?

Set up, run, and analyze an experiment using a fast cycling, 96-well system.

* What type of experiment do you want to set up?

Detect single nucleotide polymorphism variants of a target nucleic acid sequence in samples.

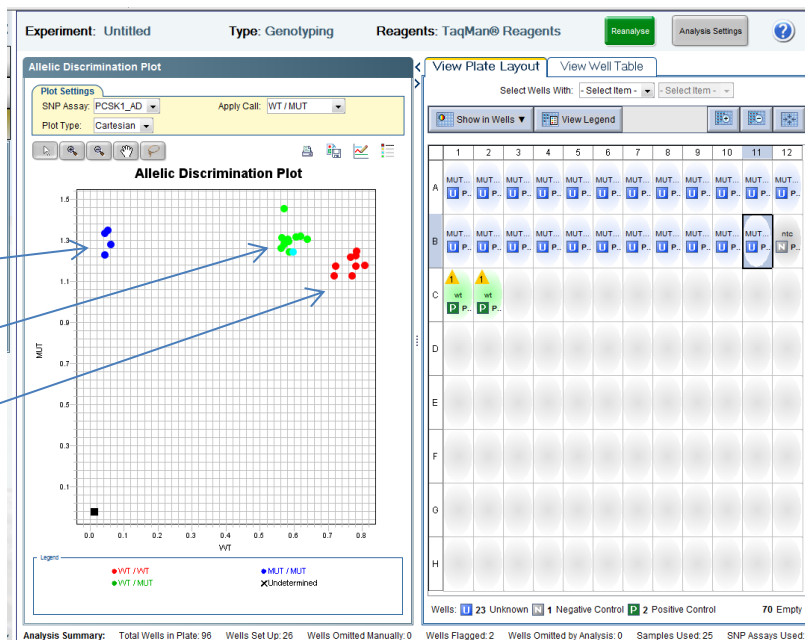
* Which reagents do you want to use to detect the target sequence?

The TaqMan reactions contain primers designed to amplify the target sequence and a TaqMan probe designed to detect amplification of the target sequence.

* Which ramp speed do you want to use in the instrument run?

For optimal results with the Fast ramp speed, Applied Biosystems recommends using Fast reagents for your PCR reactions.

Example of an PCSK1 Allelic Discrimination Plot and Results



Please note that the WT and MUT results may vary in the actual plot and the HETs always in the middle. So use your controls to group and name them accordingly.