

## Takara Custom Service

### Applications

- mRNA Expression analysis
- DNA Microarray analysis validation
- Validation of RNAi
- Analysis for very small amount of RNA (e.g from Laser Capture Microdissection)

### Choice of Detection Method

- SYBR Green
- High Sensitivity Cycling Probe Technology

### Primer/ Probe Design and Synthesis

### Optimization of Reaction Conditions

Real Time PCR conditions optimization to meet high sensitivity Takara Bio standard level (Annealing Temperature, Primer Concentration, etc...)

### DNA or RNA extraction

Extraction optimization from tissue/cell sample to allow R-PCR analysis

### R-PCR reaction

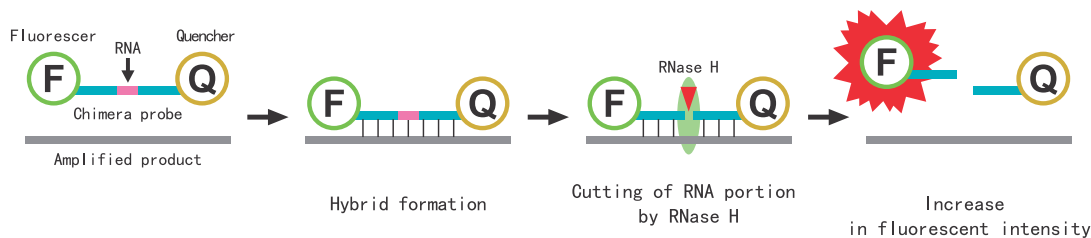
The whole R-PCR process including reaction can be achieved at Takara Bio lab under specific request

### Quantitative Analysis

## Cycling Probe Technology\*

### Highly Sensitive and Specific Detection of Amplification in Real-Time PCR

Utilizing a combination of chimera probe, composed of RNA and DNA, and RNase H. The specific sequence of target gene to be amplified can be detected efficiently during or after amplification by this method.



Multiple Probes Detection • Internal Control Amplified • Highly Specific SNP Detection • Multiplex Amplification

## Application Example

### Cycleave human Aldehyde Dehydrogenase-2 (ALDH2) Typing Probe/Primer Set

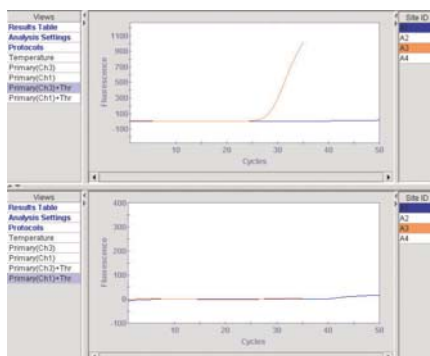
#### Highly Specific Detection & Typing of ALDH2 Single Nucleotide Polymorphism

Aldehyde Dehydrogenase-2 (ALDH2) idegrades intermediately metabolized alcohol (acetaldehyde). [ALDH2 type 1 (wild type), ALDH2 type 2 (mutant type)] : Exon 12 - 487 Glu (GAA) is replaced with Lys (AAA). This set is used with Cycleave PCR Core Kit including proprietary Takara Ex Taq Hot Start Enzyme.

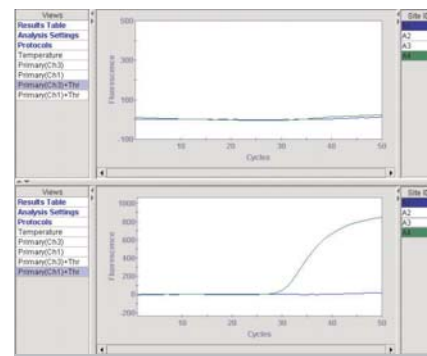
**Mispriming or Primer Dimer formation at the pre-cycling step is minimized.**

**Efficient detection and typing through amplifying a specific region of ALDH2 gene relating to SNP**

Simultaneous real time monitoring of fluorescence intensity of cycling probes which detect wild type and mutant type respectively.



1- Probe for wild type detection forms hybrid with wild type fragment in PCR amplified ALDH2 fragment.



2- Probe for mutant type detection forms hybrid with mutant type fragment in PCR amplified ALDH2 fragment

**Cycling Probe Technology cuts probes RNA part recognizing SNP.  
Quick SNP Typing in one tube, without electrophoresis.**

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