

**Product:** rhAmp Genotyping Master Mix, 25 mL

**Product number:** 1076017

**Batch number:** 0000504354

**Expiration date:** 2022-JAN-28

*rhAmp Genotyping Master Mix is optimized for use with rhAmp Reporter Mix and rhAmp SNP Assays, or with rhAmp Reporter Mix with Reference and rhAmp SNP Assays. The formulation includes a proprietary hot start DNA Polymerase with enhanced allelic discrimination properties, hot start RNase H2 enzyme, dNTPs, and buffer components optimized for specific allelic discrimination.*

| Analytical testing                |                                                                   |        |
|-----------------------------------|-------------------------------------------------------------------|--------|
| Test                              | Specification                                                     | Result |
| pH at 23°C                        | ±0.1 pH unit from target                                          | Pass   |
| dNTP concentration                | ±0.3 mM from target                                               | Pass   |
| DNase level                       | <2.0 U/μL DNase I                                                 | Pass   |
| RNase level                       | <1.0 ng/mL RNase A<br><12.5 ng/mL RNase T1<br><70.0 ng/mL RNase I | Pass   |
| Single-stranded exonuclease level | <10% decrease in fluorescent signal                               | Pass   |
| Double-stranded exonuclease level | <10% decrease in fluorescent signal                               | Pass   |

#### Analytical test methods:

**pH** is measured using a three standard calibrated pH meter and temperature probe.

**dNTP concentration** is measured by UV absorbance at 260 nm.

**DNase level** is evaluated using IDT DNaseAlert reagents via fluorescence detection after incubation at 37°C for 3 hours.

**RNase level** is evaluated using IDT RNaseAlert® reagents via fluorescence detection after incubation at 37°C for 3 hours.

**Single-stranded exonuclease level** is evaluated using a proprietary fluorescence-based assay, which monitors the degradation of a single-stranded DNA substrate after incubation at 37°C for 24 hours.

**Double-stranded exonuclease level** is evaluated using a proprietary fluorescence-based assay, which monitors the degradation of a double-stranded DNA substrate after incubation at 37°C for 24 hours.

| Enzyme testing                                                                                                                      |                                                     |        |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------|
| <i>Hot start RNase H2 and proprietary hot start DNA Polymerase are tested prior to addition to the rhAmp Genotyping Master Mix.</i> |                                                     |        |
| Test                                                                                                                                | Specification                                       | Result |
| Bacterial DNA level                                                                                                                 | <10 copies of <i>E. coli</i> DNA per 1 µg of enzyme | Pass   |
| Hot start enzyme inhibition (Polymerase)                                                                                            | <5% increase in fluorescent signal                  | Pass   |
| Hot start enzyme inhibition (RNase H2)                                                                                              | <10% increase in fluorescent signal                 | Pass   |

#### Enzyme test methods:

**Bacterial DNA level** is measured using a qPCR assay targeting an *E. coli*-specific DNA sequence.

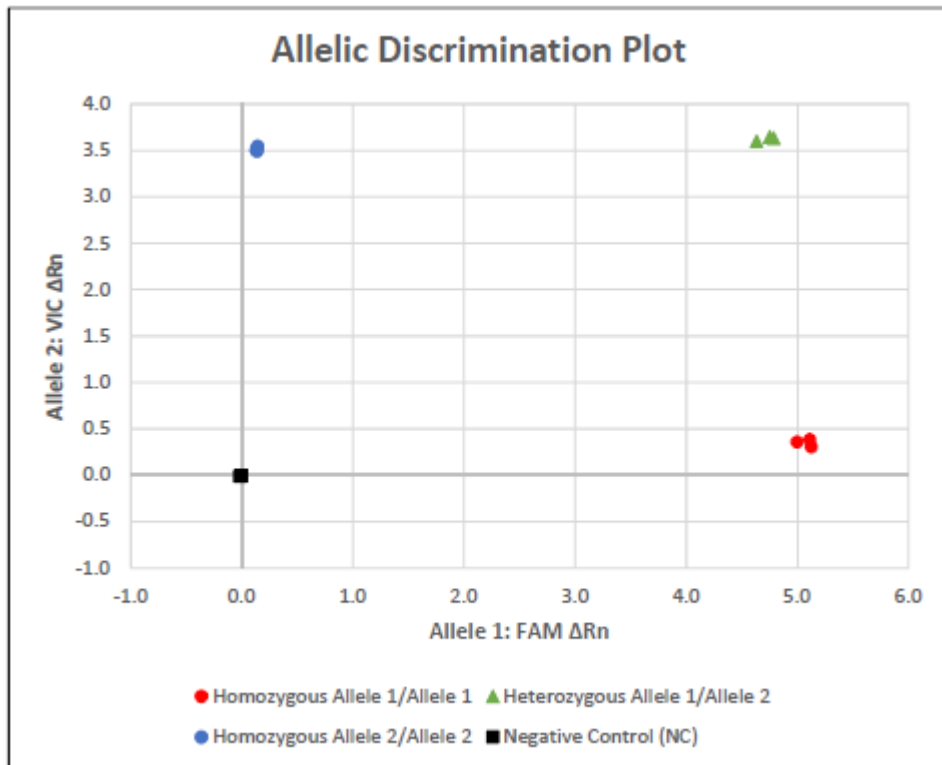
**Hot start enzyme inhibition** is confirmed by proprietary testing methods, which monitor enzyme activity on a fluorescently labeled substrate at an elevated temperature.

### Functional testing

*rhAmp Genotyping Master Mix is tested for allelic discrimination performance using rhAmp Reporter Mix with Reference and a rhAmp SNP Assay targeting 1000 copies of double-stranded gBlocks Gene Fragment template. PCR cycling and analysis is performed using the QuantStudio™ 7 Flex Real-Time PCR System (Thermo Fisher Scientific).*

| Test                   | Result |
|------------------------|--------|
| Allelic discrimination | Pass   |

Allelic discrimination plot



**Storage:** Store rhAmp Genotyping Master Mix in a sealed container at  $-20^{\circ}\text{C}$ . Upon addition of rhAmp Reporter mix, store up to 2 weeks at  $2-8^{\circ}\text{C}$ , protected from light.

**Verified by:** Jacob Petrzeka

**Quality release date:** 2020-FEB-25

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