

User Manual

Tetraplex Real-Time PCR AllAll G

Principle

Allergen detection by Real-Time polymerase chain reaction (Real-Time PCR) is based on the amplification of a specific region of the allergen's genome. The amplified products are detected simultaneously via fluorescent dyes, each dye is characteristic for one allergen. DNA characteristic of the following allergens can be detected by exciting the corresponding fluorescence dye (ex, max. excitation wavelength [nm]; em, max. emission wavelength [nm]):

Lupine FAM (ex 494 / em 520)

Almond Joe (ex 520 / em 548)

Para Nut ROX (ex 575 / em 605)

Sesame Cy5 (ex 646 / em 662)

The cycle at which the fluorescence from a dye crosses a given threshold yields the cycle threshold, Ct. Quantification of the amount of specific DNA contained in a sample can be achieved through comparison of the measured Ct to known standards.

Crossreactivity

The almond system shows cross reactivity with other prunus species; e.g. apricot, peach, nectarine, cherry.

Contents and Storage

5 tubes of primer-probe mix, lyophilized, for 5x20 reactions. Shipped at ambient temperature, store at -20°C, do not expose to light.

Reagents to be Supplied by User

PCR Mastermix, e.g. QuantiFast Multiplex PCR NoROX from Qiagen (Cat.no. 204754) or similar product.

Protocol

1. Add 150 µl water (PCR grade) per tube of primer-probe mix, vortex vigorously and incubate for 5 min at 60°C (store solution at 4°C, do not expose to light, stable for 1 week).

2. Add 250 µl QuantiFast Multiplex PCR NoROX or respective amount of similar product and mix well. Yields 400 µl ready-to-use mastermix for 20 reactions à 25 µl reaction volume.

3. Mix 20 µl ready-to-use mastermix with 5 µl sample solution (recommended amount of DNA: 100 ng) in a suitable PCR reaction vessel.

4. Set up your Real-Time PCR machine according to the manufacturer in order to be able to measure the used fluorescence dyes.

5. Use the following thermal cycling profile:

1 Denaturation:
Quantitect: 15 min 95 °C
QuantiFast: 5 min, 95 °C

2 Amplification:
Quantitect: 10 s, 95 °C
QuantiFast: 5 s, 95 °C

3 Amplification:
Quantitect: 60 s, 60 °C
QuantiFast: 30 s, 60 °C

4 Elongation:
Quantitect: 60 s, 72 °C
QuantiFast: not necessary.

Cycle from step 2 to 3 or 4 for 35 times.

6. Analyze the fluorescence traces according to the manufacturer of your Real-Time PCR machine and determine the Ct-values and the amount of target DNA in each sample by comparing to known standards.

Contact

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Further Information

<https://www.microsynth.ch/food-testing-assays.html>

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