**User Manual**

**Pentaplex Real-Time PCR AllMaizeE**

**Principle**
Detection of genetically modified maize by Real-Time polymerase chain reaction (Real-Time PCR) is based on the amplification of a specific region of the transgenic marker. The amplified products are detected simultaneously via fluorescent dyes, each dye is characteristic for one genetically modified maize gene. DNA of the following transgenic maize can be detected by exciting the corresponding fluorescence dye (ex, max. excitation wavelength [nm]; em, max. emission wavelength [nm]):

- **GA21** FAM (ex 494 / em 520)
- **DAS-59122-7** JOE (ex 520 / em 548)
- **Mon89034** ROX (ex 575 / em 605)
- **Maize (mhmg)** Cy5 (ex 646 / em 662)
- **MON 88017** DY681 (ex 691 / em 708)

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.

**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 SensiFAST Probe No-ROX 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. 15 min, 95°C
   2. 5 s, 95°C
   3. 60 s, 60°C
   4. Repeat steps 2 to 3 39 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.

**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 SensiFAST Probe No-ROX from BioLine (BLINBIO-86020) or similar product.

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**Further Information**
www.microsynth.ch/food-testing-kits.html