MyTaq™ Plant-PCR

A Quantum Leap For PCR

- **Fast:** eliminates complex, slow and costly DNA extraction steps, thereby reducing time to results
- **Robust:** specifically developed to overcome common plant-derived PCR inhibitors such as polyphenolics and polysaccharides for highest PCR success rates and improved sensitivity
- **Versatile:** ideal for a wide range of plant species, avoiding the need for further optimization, thereby minimizing setup time and reducing cost
- **Streamlined workflows:** ideal for fast genotyping in plant genetic studies, mutation detection, confirming transgenic plant and knockout analysis

MyTaq™ Plant-PCR Kit offers fast, highly-specific, direct PCR from a wide range of plant leaf samples. The novel buffer system circumvents the need for additional PCR stabilizers and traditional purification steps, thereby avoiding a complex extraction process.

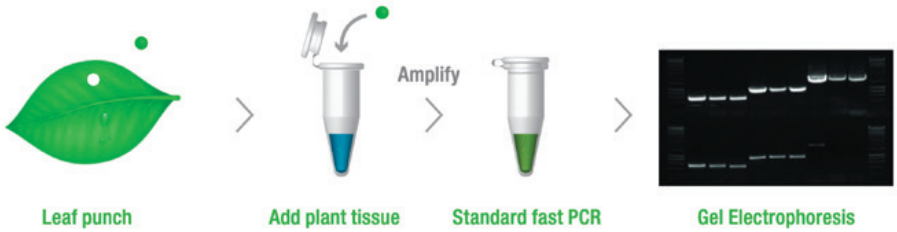

Fig 1. Overview of workflow – from plant leaf sample to PCR product

NOVEL, HIGHLY OPTIMIZED BUFFER SYSTEM WITH ENHANCED TOLERANCE TO PCR INHIBITORS

The presence of inhibitors in plant tissues such as complex polysaccharides, polyphenols and humic acids, as well as template/primer inaccessibility or degradation in the crude sample means that native DNA polymerases are inhibited by relatively small amounts of plant tissue, making direct PCR from plants a challenge. MyTaq Plant-PCR Kit features a novel, proprietary buffer system that has been specifically developed to overcome these PCR inhibitors, offering significant improvements in yield and sensitivity (Fig. 2).

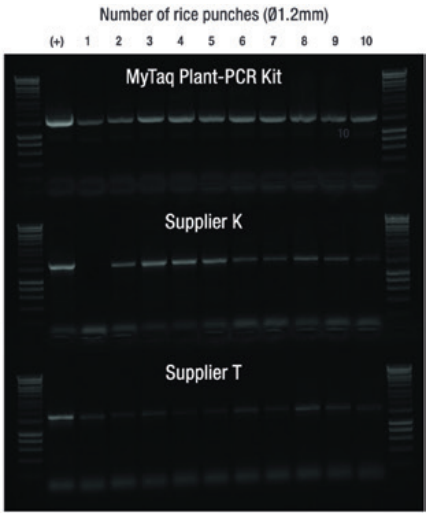

Fig 2. Increasing concentration of inhibitors in a reaction
Amplification of 0.5 kb fragments, from between 1 and 10 rice leaf punches (1.2 mm). 50 µL PCR reactions were set up using the MyTaq Plant-PCR Kit and kits from supplier K and T. The thermal cycling conditions were set according to the manufacturers recommendations. Increasing the number of leaf punches also increases the concentration of inhibitors in the reaction. The results illustrate that MyTaq Plant-PCR is better at coping with increasing inhibition than other kits, without compromising the PCR efficiency. (+) Control reaction with purified DNA. MW marker HyperLadder 1kb.

bioline.com/mytaq

meridian BIOSCIENCE®
LIFE DISCOVERED. LIFE DIAGNOSED.

DIRECT PCR FROM A VARIETY OF PLANT SPECIES

MyTaq Plant-PCR Kit is designed to amplify DNA directly from a variety of plant samples. Higher yields mean improved sensitivity, no need for further optimization and greater confidence in results (Fig. 3).

A STREAMLINED WORKFLOW FOR RELIABLE RESULTS

MyTaq Plant-PCR streamlined workflow and highly optimized buffer system result in reproducibly higher yields, even with plant leaves rich in PCR inhibitors such as anthocyanin, flavonol and phenolic acids (found in tomato leaves), or with tough leaves (rice and sugarcane leaves), that normally require complex extraction processes (Fig. 4).

SUITABLE FOR DRIED OR CHALLENGING SAMPLES

MyTaq Plant-PCR Kit can also be used for dried leaves, or samples where the tissue is challenging and more extreme extraction methods are usually necessary (Fig. 5).

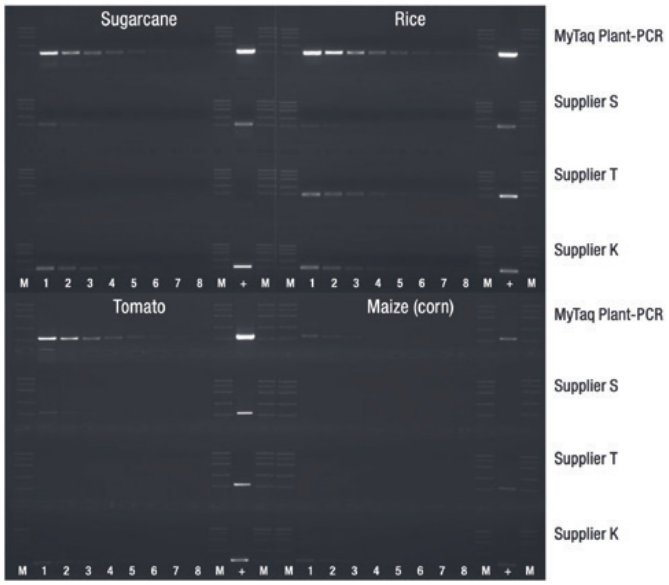

Fig 3. Sensitivity of amplification from different plant samples
Amplification of 0.5 kb fragments directly from leaf punches (1.2 mm diameter) and purified DNA (+) from sugarcane, rice, tomato and maize. 50 µL PCR reactions were set up using the MyTaq Plant-PCR Kit and kits from supplier S, T and K. The thermal cycling conditions were set according to the manufacturers recommendations. A two-fold serial dilution of the PCR product was run on a 1% agarose gel. The results illustrate that MyTaq Plant-PCR exhibits higher yield and therefore higher sensitivity for all tested species compared to the other suppliers. MW marker EasyLadder I.

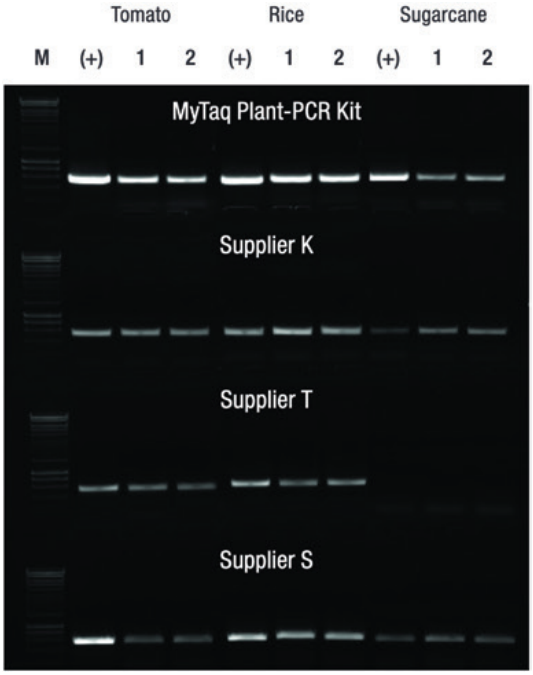

Fig 4. Reproducibility between PCR reactions
Amplification of a 0.5 kb fragment directly from two separate leaf punches (1.2 mm diameter) and purified DNA (+) from tomato, rice and sugarcane. 50 µL PCR reactions were set up using the MyTaq Plant-PCR Kit and kits from suppliers S, T and K. The thermal cycling conditions were set according to the manufacturers recommendations. MyTaq Plant-PCR exhibits reproducibly higher yields. MW marker HyperLadder 1 kb.

Fig 5. Comparison of fresh and dried leaf samples
Amplification of 0.5 kb fragments directly from fresh (FS) and dried (DS) leaf punches (1.2 mm diameter) from rice, sugarcane and tomato. The dried samples were pretreated by addition to 100 uL of extraction buffer (1.25 w/v SDS) and incubation at 95°C for 5 minutes. 1 µL of this extract or the fresh leaf punch was used in a 50 µL PCR reaction setup using the MyTaq Plant-PCR Kit. The results illustrate that MyTaq Plant-PCR exhibits similar results from both the fresh and dried leaf samples. MW marker EasyLadder I.

Ordering Information

MyTaq Plant-PCR Kit	Size	Cat. #
MyTaq Plant-PCR Kit	250 Reactions	BIO-25055
	500 Reactions	BIO-25056

Contact information:

Global
E: info@meridianlifescience.com
Toll free: +1 800 327 6299

Australia
E: info.au@meridianlifescience.com
Tel: +61 (0)2 9209 4180

Connect with us:

bioline.com/mytaq