

KAPA3G Plant PCR Kits

Direct PCR from plant tissue

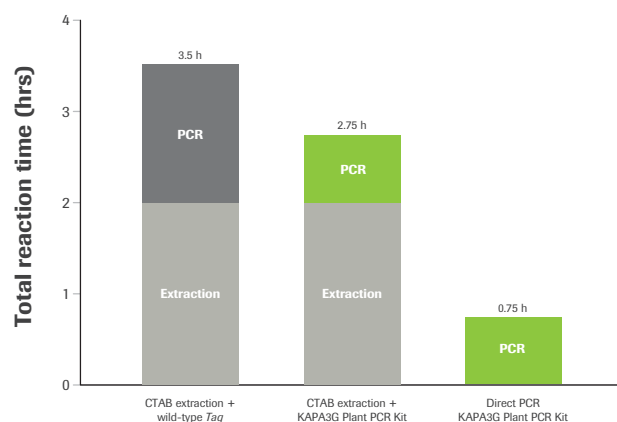
KAPA3G Plant PCR Kits are designed to utilize either purified DNA or crude extracted DNA for PCR of plant-derived DNA. The kits can also be used for direct PCR. Kit contains KAPA3G DNA Polymerase—engineered for improved tolerance to common plant-derived PCR inhibitors such as polyphenolics and polysaccharides.

Benefits include:

- fast PCR direct from plant tissues such as leaf discs, seeds and crude plant extracts
- streamlined workflows for transgenic screening
- improved PCR success rates and reproducibility

Streamline workflows and improve turnaround times

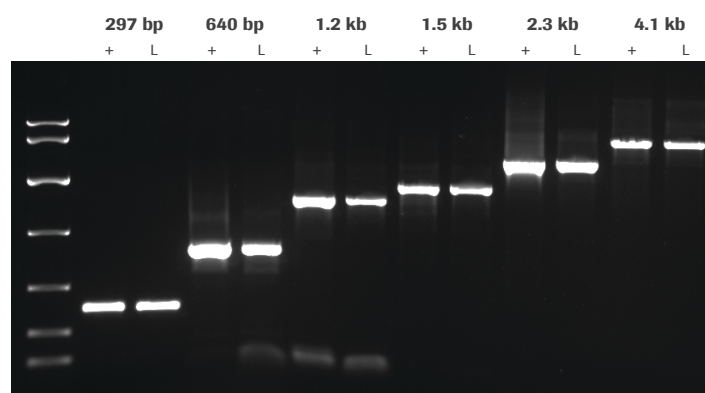
- Perform PCR in half the time compared with wild-type enzymes
- Eliminate the need for time-consuming DNA extractions



Direct PCR using the KAPA3G Plant PCR Kit outperforms CTAB extraction and standard PCR using wild-type *Taq*, in significantly shorter turnaround times.

Amplify long targets from crude samples and purified DNA

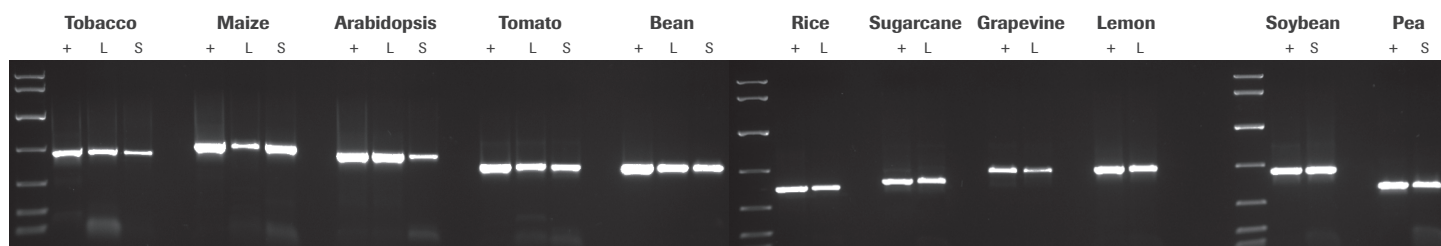
- Amplify fragments up to 5 kb
- High yield and specificity



Targets of different lengths (297 bp and 4100 bp from tobacco, 640 bp from tomato, 1221 bp from grapevine, and 1448 bp and 2249 bp from potato) were amplified from purified DNA (+) or leaf discs (L) using the KAPA3G Plant PCR Kit. For each species, genomic DNA was purified using a commercial DNA purification kit. Crude material was sampled using a 0.5 mm diameter Harris Uni-Core™ sampling tool. Purified DNA (1 – 10 ng per reaction, depending on species) and crude samples were used as templates in 50 µL PCRs, with 40 cycles of amplification. Reaction products were analyzed on a 1% agarose gel. KAPA Express DNA Ladder (100, 200, 400, 800, 1600, 4000, 8000 bp) was used as a MW marker.

Perform direct PCR from a variety of plant species and tissue types

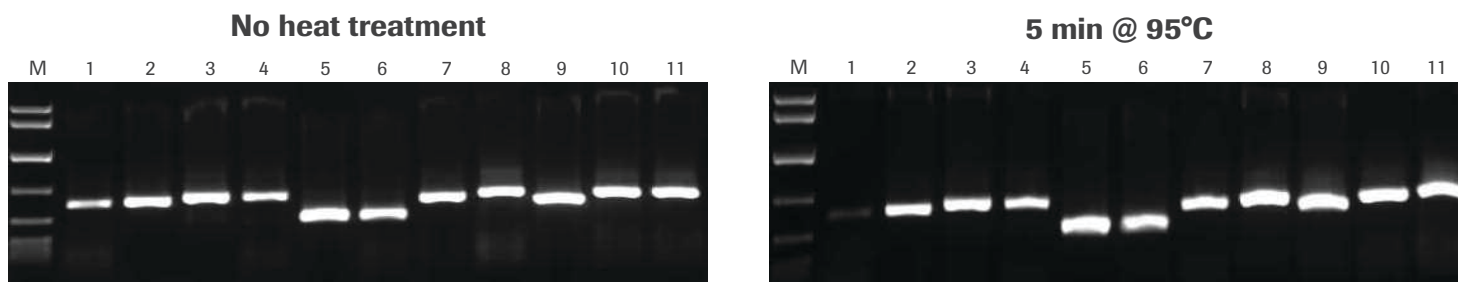
- Direct PCR with leaf disc or seed as template
- No need for time-consuming DNA extractions



Plant genomic DNA was purified from all species using a commercial DNA purification kit. A Harris Uni-Core™ sampling tool (0.5 mm diameter) was used to sample leaves (all species) or seeds (all species except tobacco and Arabidopsis; for these, one crushed seed was used per reaction). PCRs (50 µL) contained the crude sample or 1 – 10 ng purified DNA (depending on the species), and 40 cycles were performed in all cases. Targets ranged between 500 and 900 bp, and reaction products were analyzed in a 1% agarose gel. KAPA Express DNA Ladder (100, 200, 400, 800, 1600, 4000, 8000 bp) was used as a MW marker.

Improve success rates with novel crude sample plant PCR workflow

- Use extraction buffer to prepare crude extracts for plant PCR in just 5 minutes
- High success rates with even the most challenging sample types



Crude sample PCR with the Tab c/d primer pair was performed on leaves and/or seeds from 8 plants, with 1 µL of crude extract prepared without heat treatment (left) or 1 µL of crude extract prepared with heat treatment (right). Reactions were set up as described in the KAPA3G Plant PCR Kit TDS, and 45 cycles of PCR performed with annealing at 55°C, and 20 sec extension at 72°C per cycle. KAPA Express DNA Ladder (100, 200, 400, 800, 1600, 4000, 8000 bp) was used as a MW marker. 1: Eucalyptus; 2: Grapevine; 3: Wheat leaf; 4: Wheat seed; 5: Canola leaf; 6: Canola seed; 7: Rice seed; 8: Barley seed; 9: Corn kernel; 10: Cotton seed; 11: Cotton leaf.

Ordering information

Roche cat. no.	KAPA code	Description	Kit size
07961723001	KK7251	KAPA3G Plant PCR Kit	250 x 50 µL rxn
07961731001	KK7252	KAPA3G Plant PCR Kit	500 x 50 µL rxn

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