Invitrogen™
life technologies

AccuPrime™ *Taq*. Clean PCR, hot-start accuracy. Cycle after cycle after cycle.

With AccuPrime™ *Taq* DNA Polymerase you will:

- Get the the highest PCR specificity
- Eliminate reaction optimization and primer set redesign
- Save valuable reagents by increasing the number of targets in multiplex PCR

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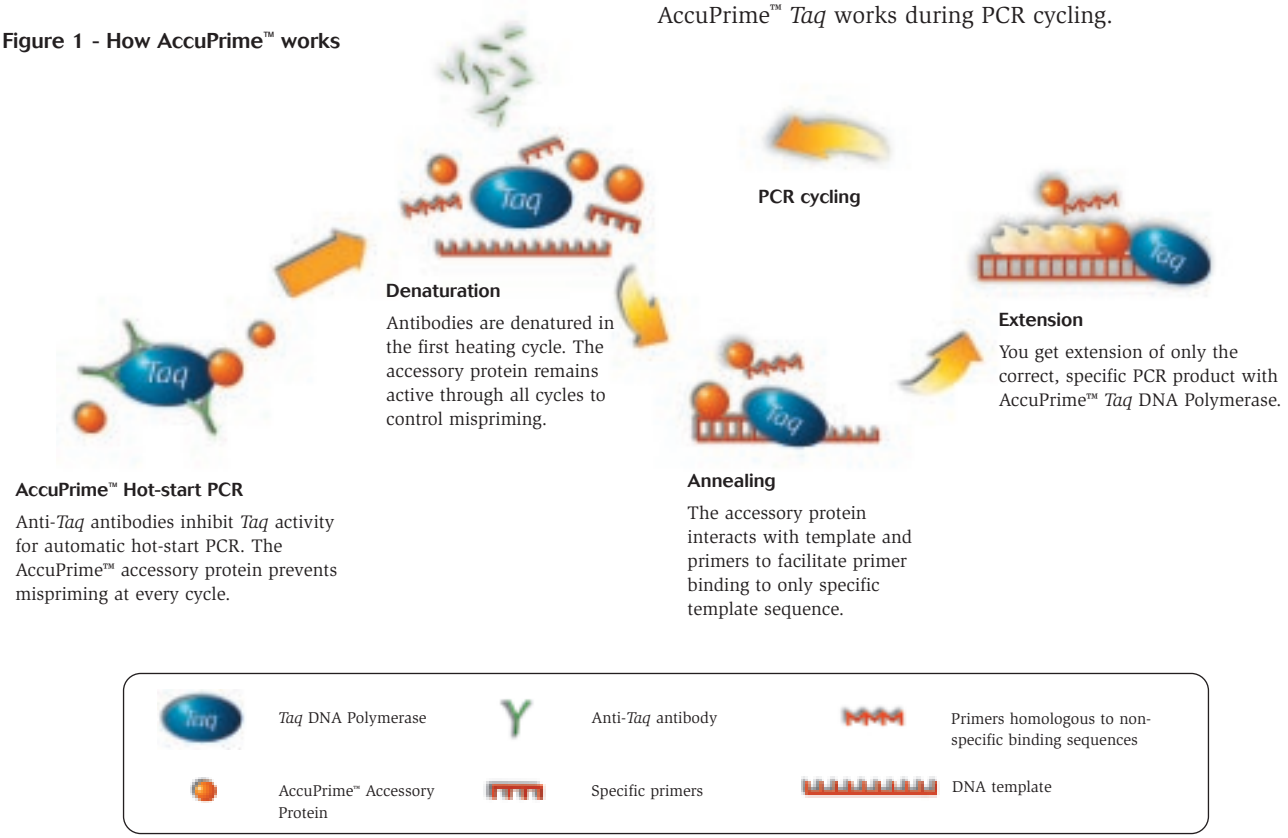
Prevent mispriming at every PCR cycle

For accurate performance and specificity in PCR, AccuPrime™ *Taq* DNA Polymerase sets the standard. This new generation enzyme technology prevents mispriming throughout all cycles of PCR. Amplify only your specific DNA targets of interest, cycle after cycle, without non-specific bands or re-optimization of reaction conditions. You'll obtain highly accurate results and increase productivity. With AccuPrime™ *Taq*, you won't need to repeat experiments or spend valuable time troubleshooting.

Advanced enzyme technology

AccuPrime™ *Taq* provides superior priming accuracy and PCR specificity that can't be achieved with other automatic hot-start enzymes. Anti-*Taq* DNA polymerase antibodies inhibit polymerase activity providing an automatic hot-start. The proprietory accessory protein provides additional control over mispriming by interacting with template and primers to facilitate primer binding to only specific template sequence. While the antibodies are denatured in the first heating cycle of PCR, the accessory protein remains active throughout all PCR cycles to control mispriming. With AccuPrime™ *Taq* you'll get extension of only the correct, specific PCR product. Figure 1 demonstrates how AccuPrime™ *Taq* works during PCR cycling.

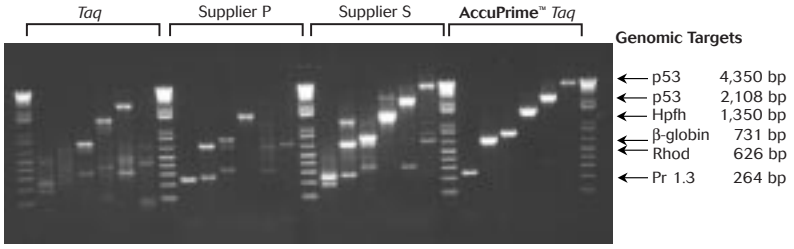
Figure 1 - How AccuPrime™ works



Get the highest PCR specificity

Invitrogen was first to offer Platinum® technology, which uses antibodies to bind the enzyme for automatic hot-start. Platinum® *Taq*, and other hot-start enzymes, improve the generation of specific PCR products, but can only control mispriming at the start of PCR. By combining Platinum® antibody technology with a thermostable accessory protein, AccuPrime™ *Taq* delivers unprecedented PCR specificity. You'll get amplification of only the specific target DNA of interest without non-specific PCR products or optimization of the reaction (Figure 2).

Figure 2 - Comparison of PCR specificity with AccuPrime™ *Taq* vs. hot-start *Taq* polymerases

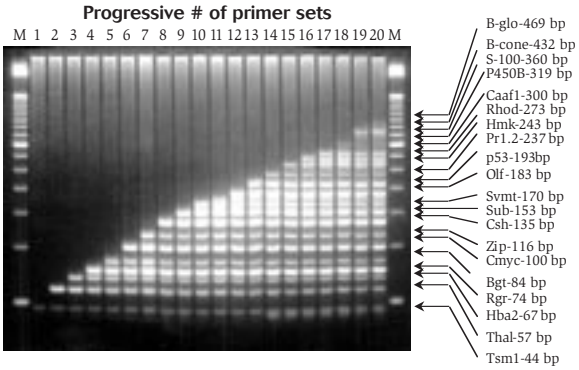


Various targets were amplified using several hot-start polymerases according to the manufacturers recommendations from 20 ng K562 genomic DNA. Reactions were assembled at room temperature with two units of enzyme per 50 µl reaction. *Taq*, Supplier S, and AccuPrime™ *Taq* were preincubated for two minutes at 94°C; Supplier P was preincubated for 10 minutes at 94°C.

Get great results the first time

Because you get only the specific product you need the first time, every time, AccuPrime™ *Taq* is ideal for demanding PCR applications where the most robust PCR is required. In multiplex PCR, AccuPrime™ *Taq* delivers a single band for as many as 20 targets per reaction (Figure 3). And AccuPrime™ *Taq* controls non-specific amplification in miniaturized reactions down to 10 µl. With troublesome or poorly designed primer sets, or for reduction of primer-dimers in PCR, AccuPrime™ *Taq* broadens primer annealing temperatures with robust performance between 55°C and 65°C. Primer design is less critical than with conventional hot-start enzymes, allowing you to overcome problems caused by sub-optimally designed primer sets (Table 1). Don't waste your time and resources on redesigning primer sets, try AccuPrime™ *Taq*.

Figure 3 – Resolution of up to 20 specific PCR products from a single-tube multiplex reaction



Each lane from left to right represents the progressive number of primer sets (1-20) included in a single-tube, 50 µl PCR reaction. PCR reactions were assembled on ice, using 200 ng K562 human genomic DNA, and five units AccuPrime™ *Taq* DNA Polymerase, and amplified for 35 cycles (94°C for 15 seconds, 60°C for 30 seconds, 68°C for one minute).

Table 1 – PCR primer specificity with AccuPrime™ *Taq* vs. hot-start *Taq* DNA polymerase

Improvement seen with Accuprime™ *Taq*	Sets (%)
Great Improvement –a single band of correct size	120 (40%)
Moderate Improvement –significant reduction of non-specific bands	105 (35%)
No difference –good primer specificity with hot-start *Taq* vs. AccuPrime™ *Taq*	75 (25%)
Total Primer Sets	**300**

AccuPrime™ *Taq* DNA Polymerase was evaluated vs. Supplier Q hot-start *Taq* DNA Polymerase in PCR without optimization. Primers were randomly designed from various genomic targets (60 bp-4.5 kb) and performed under standard PCR conditions.

Versatile technology

Take control of mispriming today. The AccuPrime™ technology is available in a variety of configurations depending upon your needs. AccuPrime™ SuperMix I is designed for small genomic DNA amplicons (≤ 200 bp), plasmid DNA, or cDNA applications. AccuPrime™ SuperMix II is designed for genomic DNA (200 bp-4 kb). The AccuPrime™ *Taq* DNA Polymerase System includes all the components needed for accurate amplification (except for template and primers), including both buffer systems (I & II). Eliminate PCR mispriming cycle after cycle, call and order AccuPrime™ *Taq* today.

Ordering information

Product	Quantity	Cat. no.
AccuPrime™ *Taq* DNA Polymerase System*	200 reactions	12339-016
	1,000 reactions	12339-024
AccuPrime™ SuperMix I§	200 reactions	12342-010
	1,000 reactions	12342-028
AccuPrime™ SuperMix II§	200 reactions	12341-012
	1,000 reactions	12341-020

* AccuPrime™ *Taq* DNA Polymerase is subject to Limited Label Licenses A, 14, and 33. Please refer to the Invitrogen web site at www.invitrogen.com or Catalog for the corresponding Limited Label License statements.

§ AccuPrime™ SuperMix I & II are subject to Limited Label Licenses A, 12, 14, and 33. Please refer to the Invitrogen web site at www.invitrogen.com or Catalog for the corresponding Limited Label License statements.

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