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Q5® High-Fidelity DNA Polymerases

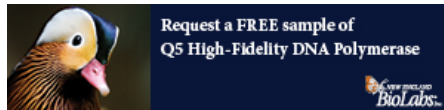
Product Listing

Product Overview

Fidelity at its Finest

See what our customers are saying about Q5® High-Fidelity DNA Polymerases

Q5® High-Fidelity DNA Polymerase (NEB #M0491) sets a new standard for both fidelity and robust performance. With the highest fidelity amplification available (>100 times higher than *Taq*), Q5 DNA Polymerase results in ultra-low **error rates**. Q5 DNA Polymerase is composed of a novel polymerase that is fused to the processivity-enhancing Sso7d DNA binding domain, improving speed, fidelity and reliability of performance.

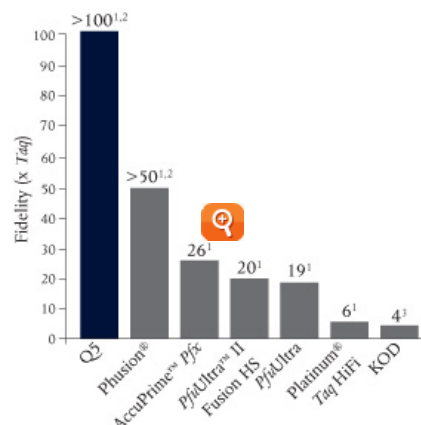


Important Tips for Q5® Polymerase



Here are some quick tips for getting the most out of NEB's Q5® High-Fidelity DNA Polymerase.

Comparison of High-Fidelity Polymerases



¹ PCR-based mutation screening in *lacZ* (NEB), *lacI* (Agilent) or *rpsL* (Life)

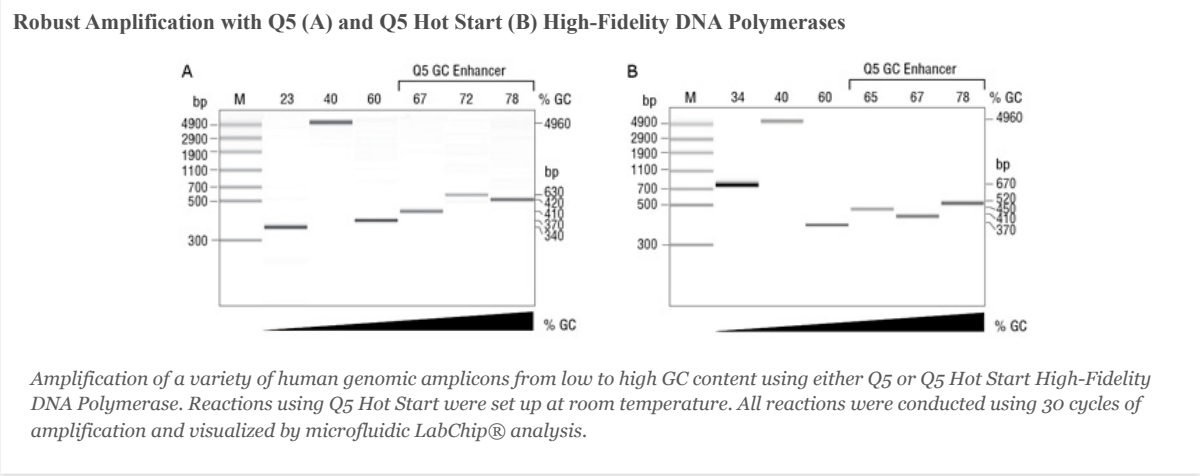
² Due to the very low frequency of misincorporation events being measured, the error rate of high-fidelity enzymes like Q5 is difficult to measure in a statistically significant manner. Although measurements from assays done side-by-side with Taq yield a Q5 fidelity values of approximately 200X Taq, we report ">100X Taq" as a conservative value.

³ Takagi et al (1997) Appl. Env. Microbiol. 63, 4504-4510.

Advantages

- Highest fidelity amplification (>100X higher than *Taq*)
- Ultra-low error rates
- Superior performance for a broad range of amplicons (from high AT to high GC)
- Hot start and master mix formats available

The Q5 buffer system is designed to provide superior performance with minimal optimization across a broad range of amplicons, regardless of GC content. For routine or complex amplicons up to ~65% GC content, Q5 Reaction Buffer (NEB #B9027) provides reliable and robust amplification. For amplicons with high GC content (>65% GC), addition of the Q5 High GC Enhancer ensures continued maximum performance. Q5 and Q5 Hot Start DNA Polymerases are available as standalone enzymes, or in a master mix format for added convenience. Master mix formulations include dNTPs, Mg⁺⁺ and all necessary buffer components.

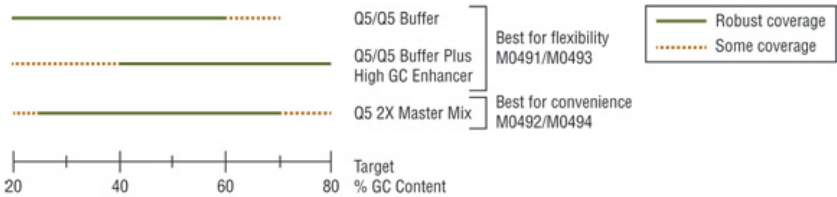


In contrast to chemically modified or antibody-based hot start polymerases, NEB's Q5 Hot Start (NEB #M0493) utilizes a unique synthetic aptamer. This molecule binds to the polymerase through non-covalent interactions, blocking activity during the reaction setup. The polymerase is activated during normal cycling conditions, allowing reactions to be set up at room temperature. Q5 Hot Start does not require a separate high temperature activation step, shortening reaction times and increasing ease-of-use. Q5 Hot Start Polymerase is an ideal choice for high specificity amplification and provides robust amplification of a wide variety of amplicons, regardless of GC content.

Amplification Performance Across a Wide Range of Genomic Targets



Master Mix and Stand-Alone Formats Provide Convenience and Flexibility



Q5® is a registered trademark of New England Biolabs, Inc.
LabChip® is a registered trademark of Caliper Life Sciences, part of Perkin Elmer, Inc.

Learn More

- [Q5® High-Fidelity DNA Polymerases Feedback](#)
- [What is Fidelity?](#)
- [For What Applications is Fidelity Important?](#)
- [How Does a High-Fidelity Polymerase Ensure that the Correct Base is Inserted?](#)
- [How is Fidelity Measured?](#)



FAQs

- Other Tools & Resources
- PCR Selection Tool
- Comparison of High-Fidelity Polymerases
- Q5 DNA Polymerase Offers Superior Amplification for a Wide Range of Templates
- Five Quality Features of Q5
- DNA Polymerase Selection Chart

- [Q5® High-Fidelity DNA Polymerase FAQs](#)

Related Product Categories



DNA Modifying Enzymes & Cloning Technology Products

Other Related Content

- [Polbase®](#)
- [NEBaseChanger™](#)