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### AviAHot™

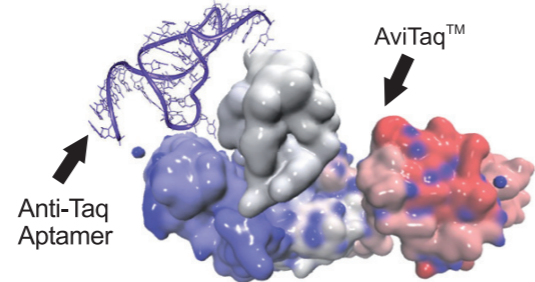
Apta hot-start Taq DNA Polymerase

AviAHot™ is a mixture of Taq DNA polymerase and a temperature-sensitive aptamer-based inhibitor. The inhibitor reversibly binds to the enzyme, suppressing polymerase activity below 40°C but releasing it during standard PCR cycling conditions.

This aptamer-based hot start mechanism eliminates the need for a separate high-temperature activation step.

AviAHot™ remains inactive at room temperature, preventing extension of non-specifically annealed primers or primer dimers, and enhancing the specificity of DNA amplification.

Once activated, AviAHot™ functions like Taq DNA polymerase: it catalyzes 5' → 3' DNA synthesis and lacks detectable 3' → 5' proofreading exonuclease activity.



**Advantages:**

- Reduces primer dimer formation.
- Requires no inactivation time.
- Helps eliminate non-specific bands.



### AviFix™

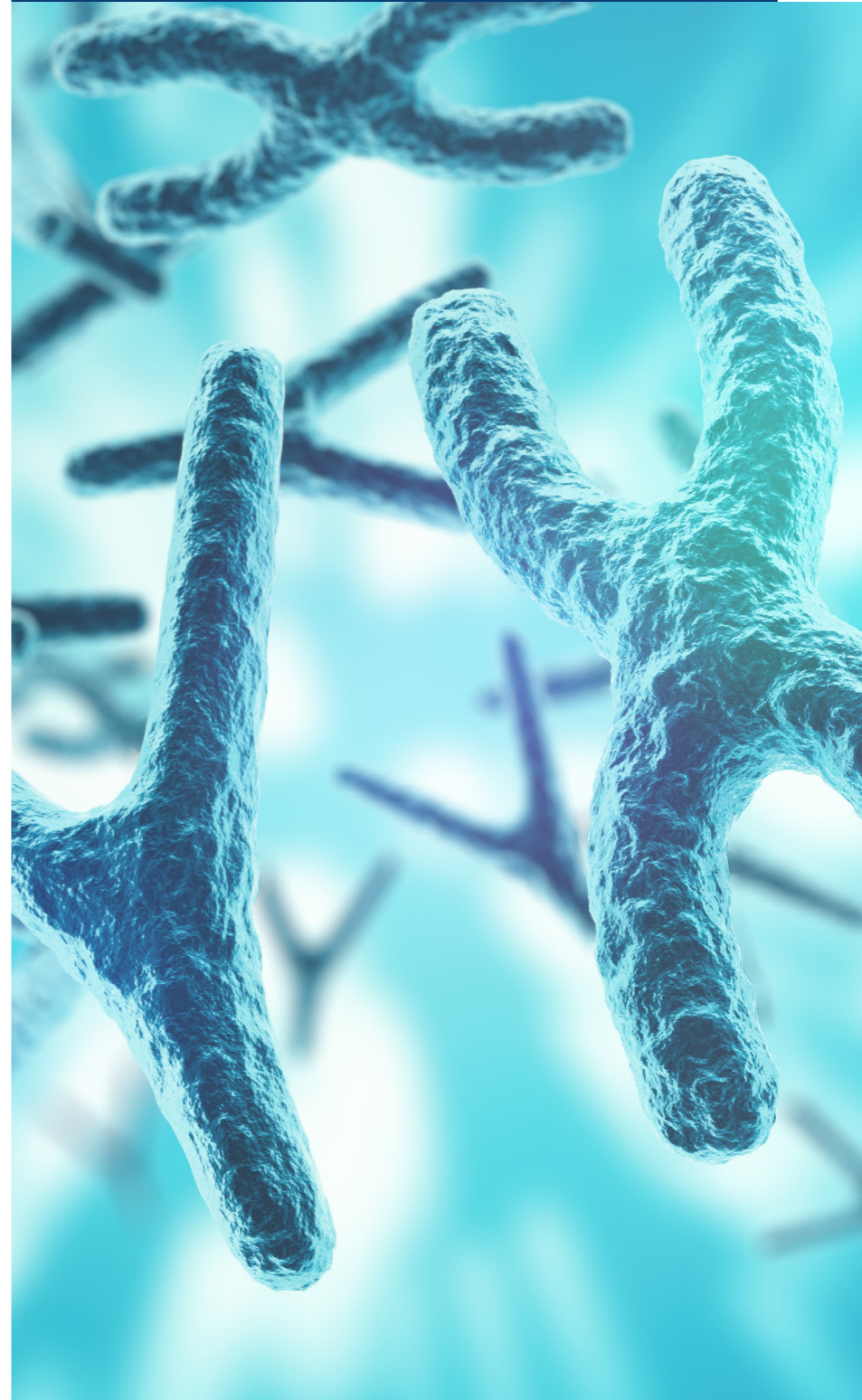
RNA fix solution

AviFix™ is a non-toxic, aqueous solution designed to preserve RNA in tissues and cells for later isolation. It allows for the recovery of intact RNA from a variety of samples, including tissues, cell cultures, bacteria, and yeasts.

Samples stored in AviFix™ at -20°C remain stable indefinitely, with no RNA degradation. AviFix™ is compatible with most RNA isolation methods, providing flexibility for downstream applications.



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# MOLECULAR BIOLOGY ENZYMES & REAGENTS

- AviTaq™
- AviKlen™
- AviLong™
- AviPfu™
- AviURT™
- AviCHot™
- AviAHot™
- AviFix™

WWW.AVIGENE.CA | WWW.TRACO.CA  
 avigene@avigene.ca | ttc@traco.ca



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### AviQ™

Taq DNA polymerase

AviQ™ is a highly purified Taq DNA polymerase, produced through chromatography, with an optimized buffer for higher specificity. It comes with an exclusive 10x reaction buffer designed to enhance PCR success when using templates with high secondary structure or GC-rich regions.

- Advantages:**
- Highly purified through chromatography.
  - Free of *E. coli* DNA.
  - Suitable for both conventional PCR and TA cloning PCR.



### AviKlen™

Klentag DNA polymerase

AviKlen™ is a modified *Thermus aquaticus* (Taq) DNA polymerase lacking the N-terminal portion of the gene. This modification results in a highly active and exceptionally thermostable enzyme, retaining significant activity even after exposure to 99°C temperature.

- Advantages:**
- Tolerates a wide range of MgCl<sub>2</sub> concentrations.
  - Has a two-fold lower error rate than standard Taq polymerase.
  - Produces amplicons compatible with T/A cloning.
  - Enables mutation analysis with mutation-specific oligonucleotides.



### AviLong™

Chimeric Pfu DNA Polymerase

AviLong™ is a chimeric Pfu DNA polymerase with a DNA-binding protein fused to its N-terminal region. This modification enhances the enzyme's processivity and extension rate compared to standard Pfu DNA polymerase, while also maintaining significant activity after exposure to 99°C or repeated exposure to 98°C.

- Advantages:**
- Faster than standard Pfu DNA polymerase.
  - Efficient amplification of GC-rich templates.
  - Suitable for high-fidelity PCR and primer extension reactions, especially for amplicons larger than 3kb.



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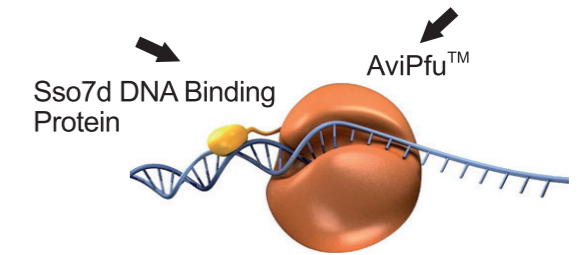
### AviPfu™

Recombinant Pfu DNA Polymerase

AviPfu™ is a recombinant Pfu DNA polymerase is a highly purified enzyme with 3' → 5' proofreading exonuclease activity, resulting in over 10-fold higher PCR fidelity compared to Taq DNA polymerase.

- Advantages:**
- Pure recombinant enzyme
  - Over 10-fold higher PCR fidelity than Taq
  - Enhanced performance due to a new buffer formulation

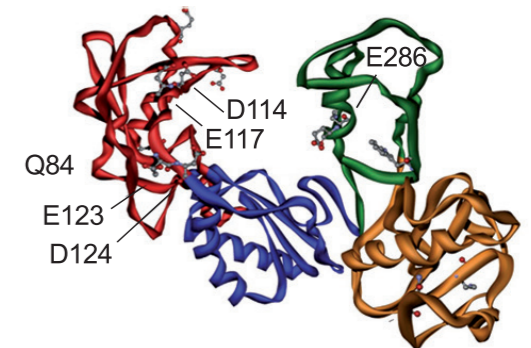
Fig: Analysis of AviQ™ and AviPfu™ on 12.5% polyacrylamide gel electrophoresis. AviPfu™ shows sharp band with a Molecular Weight 90 kDa. Taq indicates a monomer protein with Molecular Weight 94 kDa.



### AviURT™

Thermo-resistant H-minus MMLV with optimum activity at 55 °C

AviURT™ is a genetically-modified MMLV reverse transcriptase with optimum activity at 55°C. This RNA-dependent DNA polymerase requires a DNA primer and an RNA template to synthesize complementary DNA (cDNA). With lacking RNase H activity, AviURT™ prevents RNA degradation during first-strand cDNA synthesis. This results in higher yields of full-length cDNA from long templates compared to other reverse transcriptases. AviURT™ maintains functionality across a wide temperature range (50-60°C), making it an ideal choice for reverse transcription of RNAs with complex secondary structures.



### AviCHot™

Chemical Hot-Start Taq DNA Polymerase

AviCHot™ is a chemically-modified Taq DNA polymerase bound to a heat-labile inhibitor. The inhibitor reversibly binds to the enzyme, suppressing polymerase activity below 60°C but releasing it during standard PCR cycling conditions. This chemically-modified hot start mechanism requires a brief high-temperature incubation step to activate the enzyme. Being inactive at room temperature prevents the extension of non-specifically annealed primers or primer dimers, increasing the specificity of DNA amplification. Once activated, AviCHot™ functions like Taq DNA polymerase, catalyzing 5' → 3' DNA synthesis and lacking detectable 3' → 5' proofreading exonuclease activity.

