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**HIGHLY PURE**  
**ECONOMIC**  
**MOLECULAR GRADE**  
**RESEARCH & DIAGNOSTIC**  
**REAGENTS & KITS**

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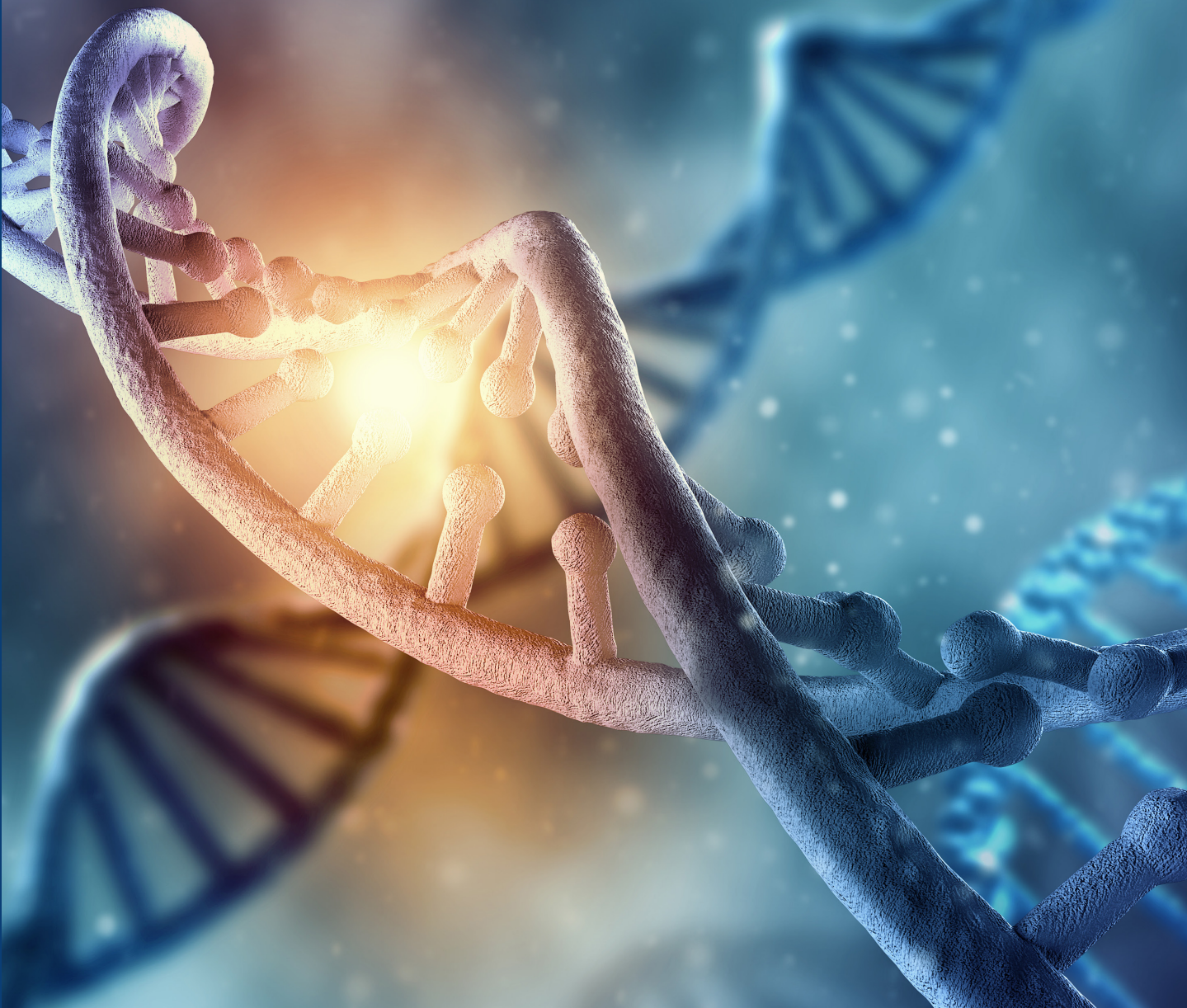
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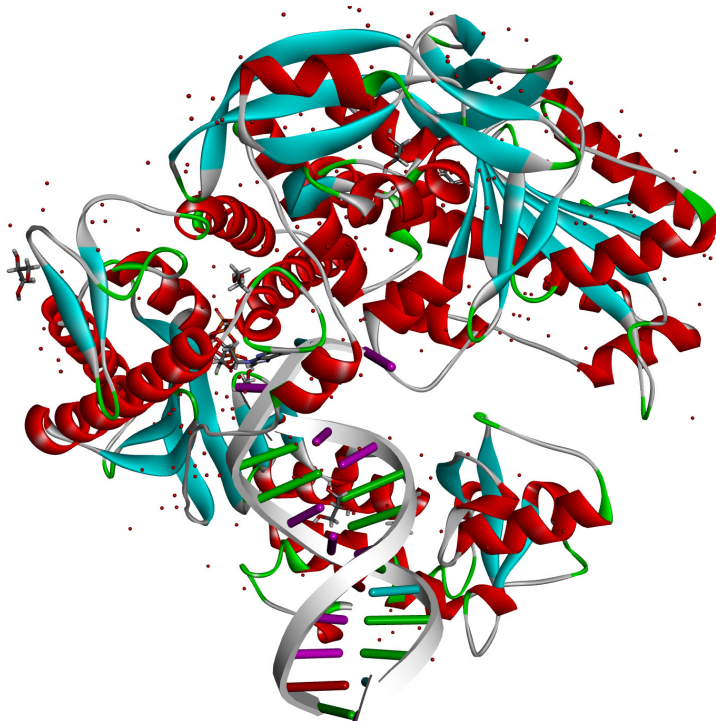
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# MOLECULAR BIOLOGY KITS

- AviCidiNA™
- AviSYBR™
- AviTooX™





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## AviCidiNA™ cDNA Synthesis kit

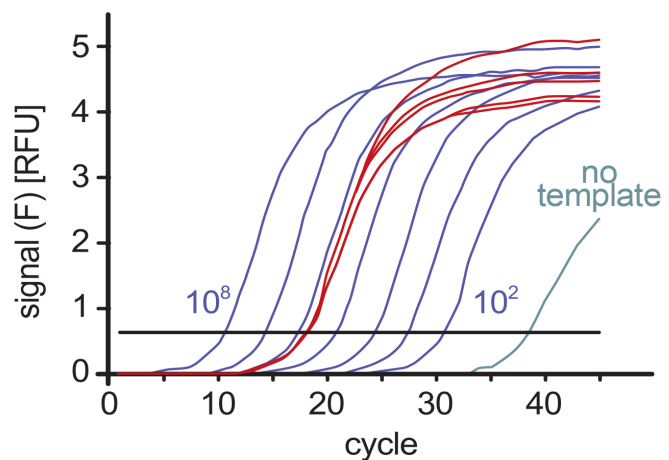
AviCidiNA™ contains all necessary components for conversion of total RNA or mRNA to the single stranded cDNA. The 2X Buffer mix solutions contains, RT buffer, 1mM dNTP mixture, 8mM MgCl<sub>2</sub>, Oligo d(t)16, Random hexamer and stabilizer. Enzyme mix contains thermostable H-minus MMLV, RNase Inhibitor and stabilizer.



- Advantages:**
- Reduction of technical errors.
  - Easy protocol.
  - Higher reaction temperature than conventional MMLV.
  - High yield and sensitive.

## AviSYBR™ SYBR Green 2X Mastermix (+ROX)

AviSYBR™ is a very sensitive and easy to use for real-time quantitative analysis of DNA and cDNA targets. This product is based on the SYBR Green I and a dual Hot-start Taq (chemically modified and anti taq) plus the pre-optimized buffer solution.



- Advantages:**
- Cost effective
  - Aptamer-based Hot start Taq DNA polymerase
  - Long-term stability
  - Easy to Use
  - Short initial denaturing time

## AviTooX™

### 2X Taq Mastermix (Red Dye)

AviTooX™ contains Taq DNA Polymerase, reaction buffer, dNTPs, protein stabilizer, 2mM MgCl<sub>2</sub>, and optimizes the convenience to use by adding sediment for electrophoresis and 2x solution of loading dye.

**Advantages:**

**Highly resistant to bad storage or frequent freeze and thaw.**

**Most convenient way to perform a PCR.**

**Reduction of technical errors.**

**No need to add loading dye for electrophoresis.**

**More economic.**



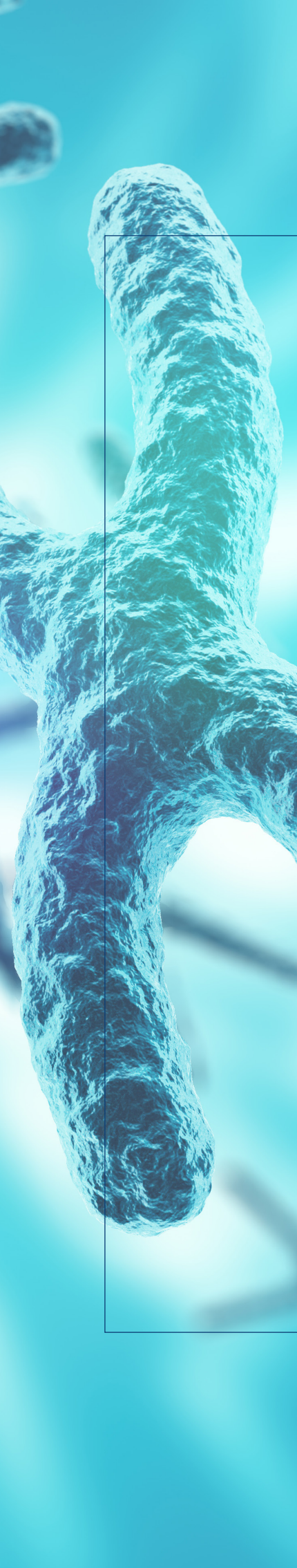




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# MOLECULAR BIOLOGY ENZYMES & REAGENTS

- AviTaq™
- AviKlen™
- AviHot™
- AviRT™
- AviPfu™
- AviLong™
- AviFix™



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## AviTaq™

Taq DNA polymerase

AviTaq™ is a chromatography highly purified enzyme with an optimized buffer to give you a specific band. It is provided with an exclusive 10x reaction buffer to improve sub-optimal PCR caused by templates, high degree of secondary structure or GC-rich regions.



**Advantages:**

**Highly chromatography purified.**

**E. Coli DNA free.**

**Suitable for conventional PCR and TA cloning PCR.**

## AviKlen™

Klentaq DNA polymerase

AviKlen™ lacks the N-terminal portion of the gene, encoding *Thermus aquaticus* (Taq) DNA polymerase, leaving a highly active and even more thermal stable DNA polymerase activity. This enzyme keeps significant activity after exposure to 99 °C.



**Advantages:**

**Wide range of optimal MgCl<sub>2</sub> concentration.**

**Two time lower error rate than Taq.**

**Amplicons are T/A Cloning compatible.**

**Mutation analysis with mutation-specific oligonucleotides.**

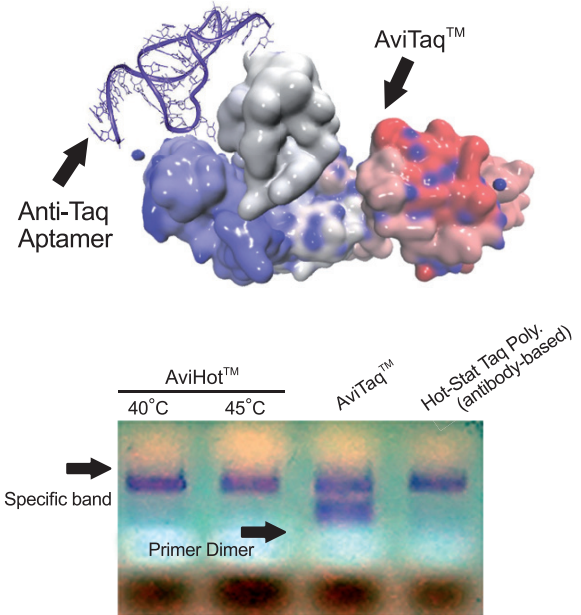


## AviHot™

Apta Hot-Start Taq DNA Polymerase

AviHot™ a mixture of Taq DNA polymerase and a temperature sensitive, aptamer based inhibitor.

The inhibitor binds reversibly to the enzyme, inhibiting polymerase activity at temperatures below 40 °C, but releases the enzyme during normal PCR cycling conditions.



### Advantages:

**Reduction of primer dimers.**

**No inactivation time.**

**Avoid non-specific bands.**

**More stable than antibody based Hot-start taqs.**

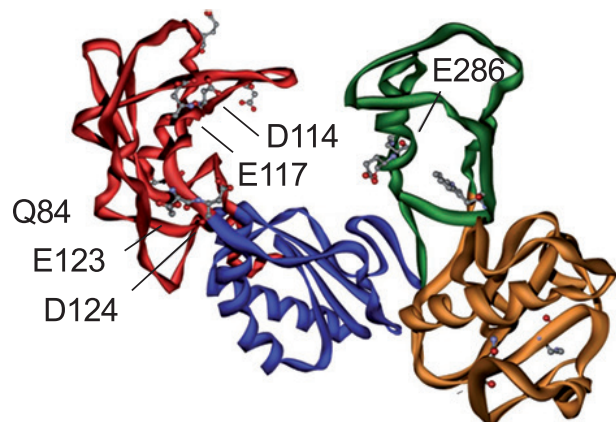
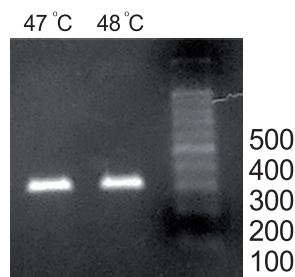
**More economical than antibody based Hot-start taqs.**

## AviRT™

M-MuLV Reverse Thermo-resistant H Minus Transcriptase

Recombinant, genetically modified RNA-dependent DNA polymerase, chromatography purified, no RNase H activity, Optimal activity at 47 °C. Reverse Transcriptase has no RNase H activity.

Therefore, degradation of RNA does not occur during first strand cDNA synthesis, resulting in higher yields of full-length cDNA from long templates compare to other reverse transcriptases.



### Advantages:

**Optimal activity at 47- 48°C.**

**RT of RNAs with a high degree of secondary structure.**

**No RNase H activity.**

**More stable than Wild type MMuLV.**



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## AviPfu™

Pfu DNA polymerase

Recombinant highly purified protein of Pfu DNA polymerase exhibits 3' > 5' proofreading activity, resulting in over 10-fold higher PCR fidelity than possible with Taq DNA Polymerases.

**Advantages:**

**Pure recombinant enzyme.**

**Over 10-fold higher PCR fidelity than Taq.**

**The enhanced performance by new formula buffer.**

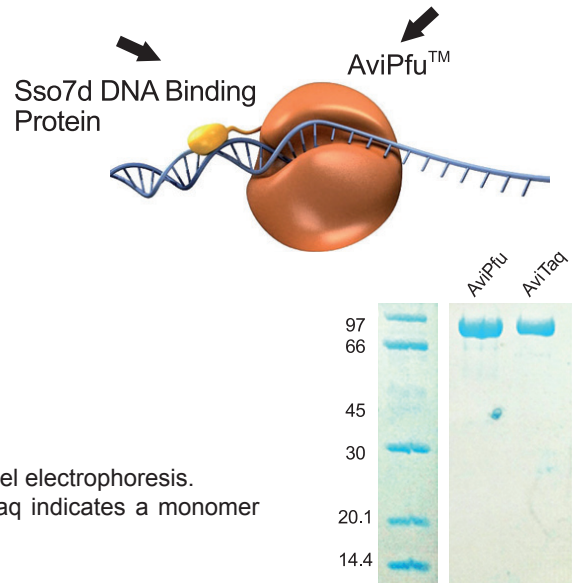


Fig: Analysis of AviTaq™ and AviPfu™ on 12.5% polyacrylamide gel electrophoresis. AviPfu™ shows sharp band with a Molecular Weight 90 kDa. Taq indicates a monomer protein with Molecular Weight 94 kDa.

## AviLong™

Pfu DNA polymerase

A chimeric Pfu which has a DNA binding protein at the N-terminal portion of the gene.

This enzyme keeps significant activity after exposure to 99 °C or repeated exposure to 98 °C with more processivity and extension rate than Pfu DNA polymerase.

**Advantages:**

**Faster than Pfu.**

**Amplification of GC rich templates.**

**It is suitable for PCR and primer extension reaction that requires high fidelity when the PCR fragment is relatively higher than 3kb.**

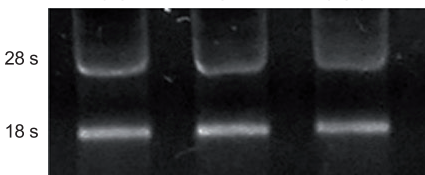




## AviFix™ RNA fix solution

AviFix™ is an aqueous, non toxic, tissue and cells storage solution intended for the preservation of RNA for later isolation. It is a preservation solution that allows recovery of intact RNA from tissues and cell culture. Samples in AviFix™ solution can be stored indefinitely at -20 °C with no RNA degradation. AviFix™ solution can be used for the storage of tissues, cells, bacteria and yeasts. AviFix™ compatible with most RNA isolation methods.

RNA isolated from three cell  
culture sample stored at:  
-20 °C    4 °C 1W    40 °C 6W







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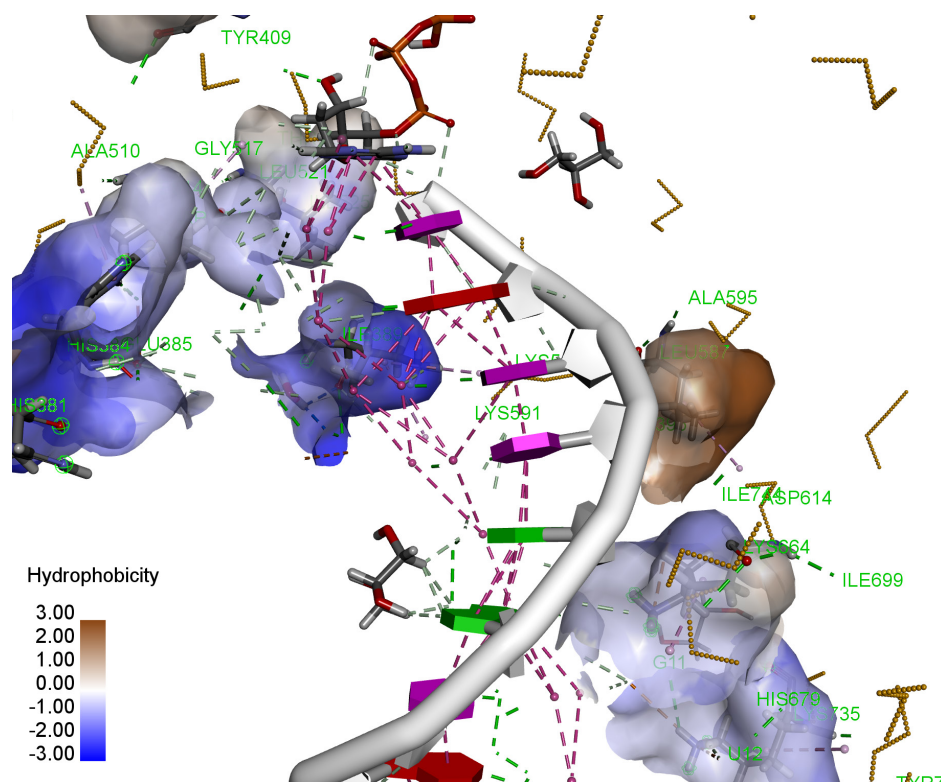
# DNA & RNA

EXTRACTION KITS .....

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# EXTRACTION KITS

- AviRex™ Total RNA
- AviRex™ Plant RNA
- AviRex™ Blood RNA
- AviDex™ Blood DNA
- AviDex™ Tissue DNA
- AviDex™ Bacteria DNA
- AviDex™ Plant DNA







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## AviRex™ Total RNA

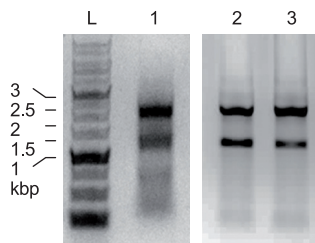
Total RNA Extraction kit

AviRex™ Total RNA uses reversible binding properties of a silica-based column. The sample is lysed first under highly denaturing phenolic buffer condition to protect RNA from degrading.

AviRex™ Total RNA allows simultaneous processing of multiple tissue samples in less than 30 min. The procedure completely removes contaminants and enzyme inhibitors making RNA isolation fast, convenient, and reliable.

### Applications:

RNA extraction from animal tissues, cell culture and blood.



L: 1 kbp DNA Ladder  
1: 10 µl RNA from Blood  
2: 5 µl RNA from J774 cells  
3: 5 µl RNA from HeLa cells

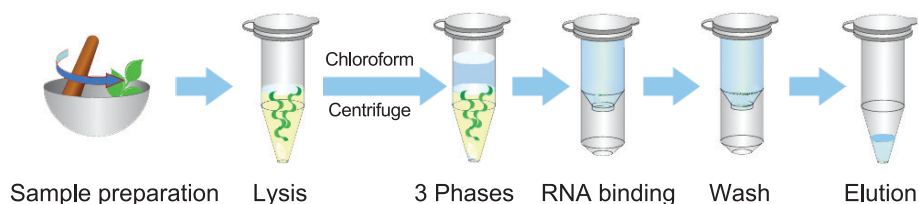


## AviRex™ Plant RNA

Plant RNA Extraction Kit

AviRex™ Plant RNA provides a convenient spin column-based method for the isolation of total RNA from a variety of plant samples. Samples should be homogenized in lysis buffer before starting the process. All the contaminants including polysaccharides and phenolic compounds are effectively removed.

Purified RNA can be used for most downstream applications such as RT-PCR, Northern blot analysis, differential display, and poly A+ RNA selection.





## AviRex™ Blood RNA

Blood RNA Extraction Kit

AviRex™ Blood RNA is designed for a silica spin-based isolation of total intracellular RNA from up to 200 µl of fresh, or frozen whole blood treated with any common anticoagulant such as heparin, EDTA or acid-citrate-dextrose. The procedure completely removes contaminants and enzyme inhibitors making total RNA isolation fast, convenient and reliable. Cell lysis, RNase inactivation and DNA removal are carried out by phenol-base solution. After separation of RNA containing section and addition of RNA enhancer, the lysate will be applied to a spin column. Cellular debris and other contaminants such as hemoglobin are effectively washed away and high-quality RNA is finally eluted in DEPC-treated water.

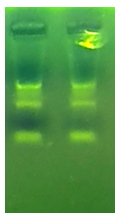
**Advantages:**

**Low sample size 200 µl**

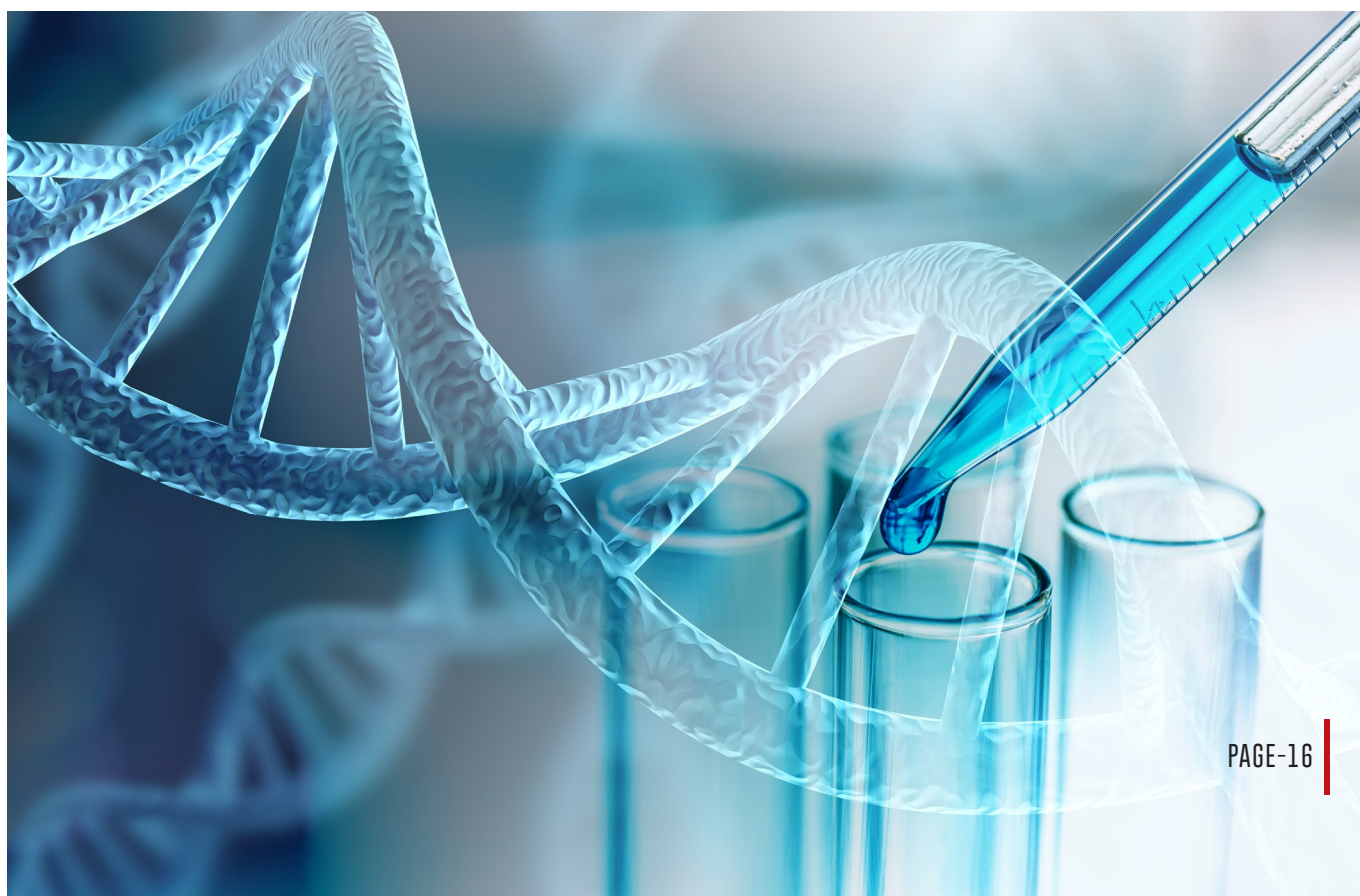
**Fast and easy protocol**

**DNA depletion**

**Suitable yield 1-4 µg**



**10 µl of extracted RNA from blood on a 1.5% agarose gel stained with Avistain™**





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## AviDex™ Blood DNA

Blood DNA Extraction kit

A silica-membrane-based DNA purification for up to 200  $\mu$ l fresh or frozen human whole blood. Expected yields of 4–10 $\mu$ g depending on the white blood cell count of the sample. High-quality DNA without any organic extraction or alcohol precipitation.

**Applications:**

**Genomic DNA extraction from human and animal blood, serum and plasma.**



**Advantages:**

**Easy protocol.**

**No precipitation step.**

**Preparation time for a single sample is less than 30 minutes.**

**Purified DNA is fully digestible with all restriction enzymes tested, and is completely compatible with downstream applications.**

## AviDex™ Tissue DNA

Tissue DNA Extraction kit

AviDex™ Tissue DNA employs proteinase K and chaotropic salt to lyse cells and degrade protein, allowing DNA to be easily bound by the glass fiber matrix of the genomic DNA spin column.

**Applications:**

**Genomic DNA extraction from liver, kidney, brain, and many animal tissues.**



**Advantages:**

**No precipitation step.**

**Preparation time for a single sample is less than 45 minutes.**

**Purified DNA is fully digestible with all restriction enzymes tested and is completely compatible with downstream applications.**

# AviDex™ Bacteria DNA

Bacteria DNA Extraction kit (G<sup>+</sup> & G<sup>-</sup>)

AviDex™ Bacteria DNA is designed for the rapid spin column preparation of genomic DNA from  $2 \times 10^9$  viable bacterial cells (between 0.5 and 1.0 ml of culture).

This kit can be used for both Gram-negative and Gram-positive bacteria including Escherichia coli and Bacillus cereus. Purified genomic DNA is of an excellent quality and yield.



## Advantages:

**Rapid and convenient spin column protocol.**

**High yield, high quality DNA for sensitive downstream applications including sequencing, PCR, qPCR and more.**

# AviDex™ Plant DNA

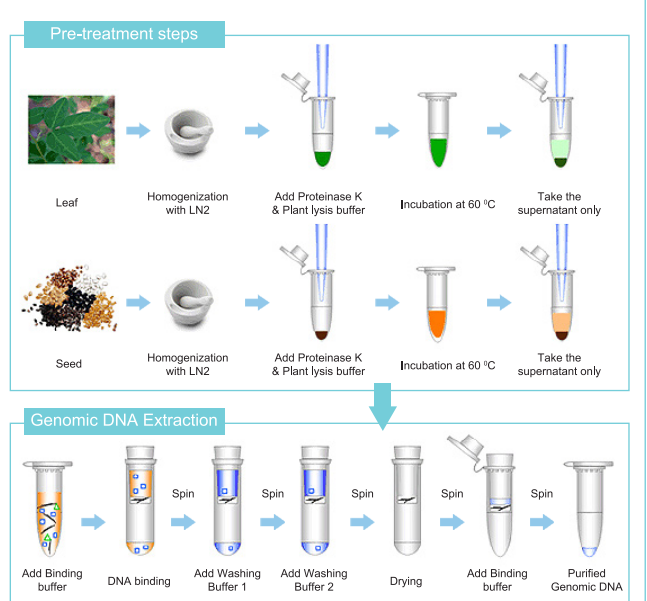
Plant DNA Extraction kit

AviDex™ Plant DNA provides a simple, efficient column based method for the isolation of genomic DNA from a wide variety of plant materials, without the need for hazardous reagents such as phenol.

## Advantages:

**Fast and Convenient:** Kit includes all necessary components High performance extraction of high quality DNA, ideal for use in all downstream applications.

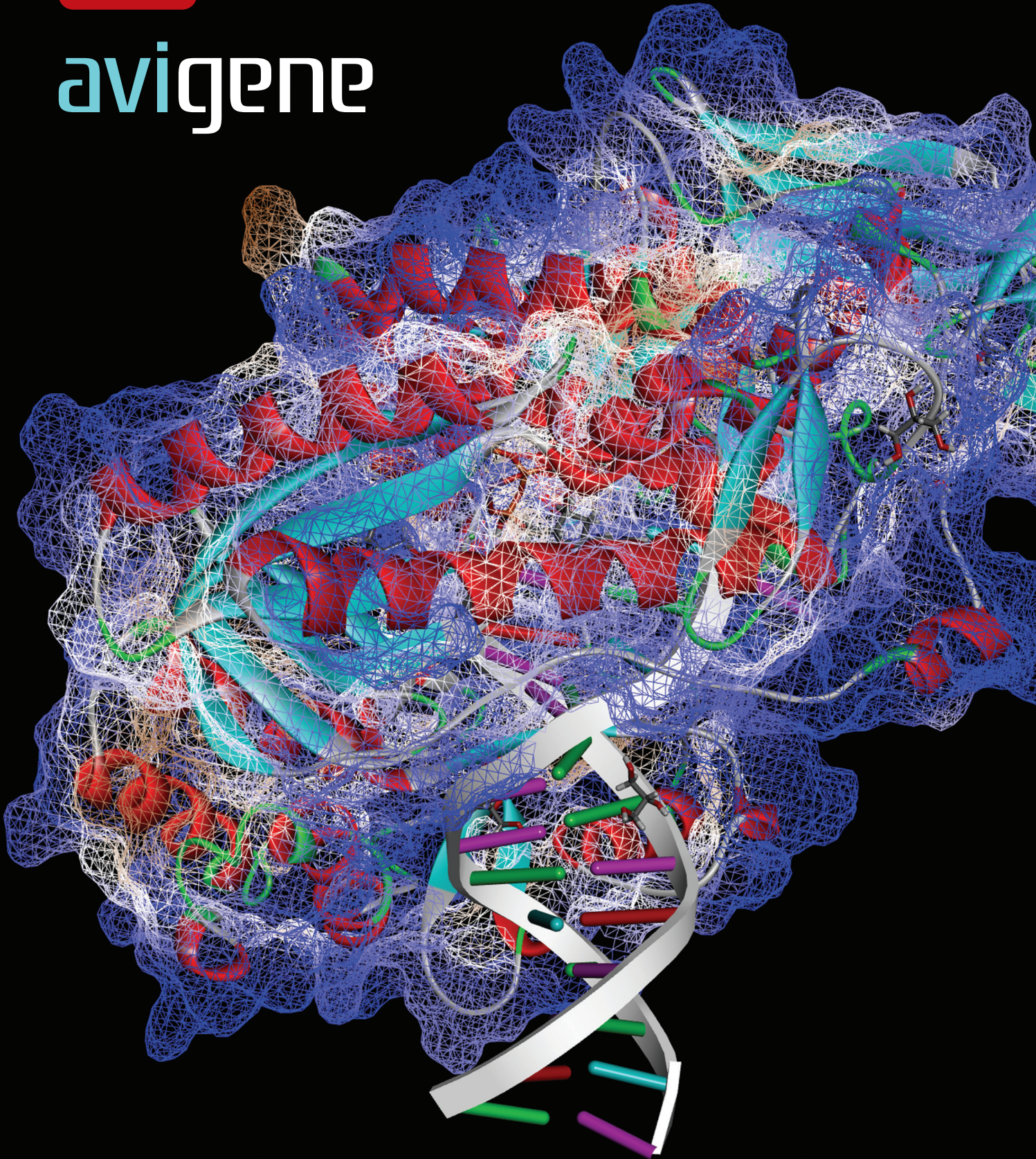
**Efficient:** Optimized lysis conditions and column matrix for improved recovery of genomic DNA from a wide range of plant samples.







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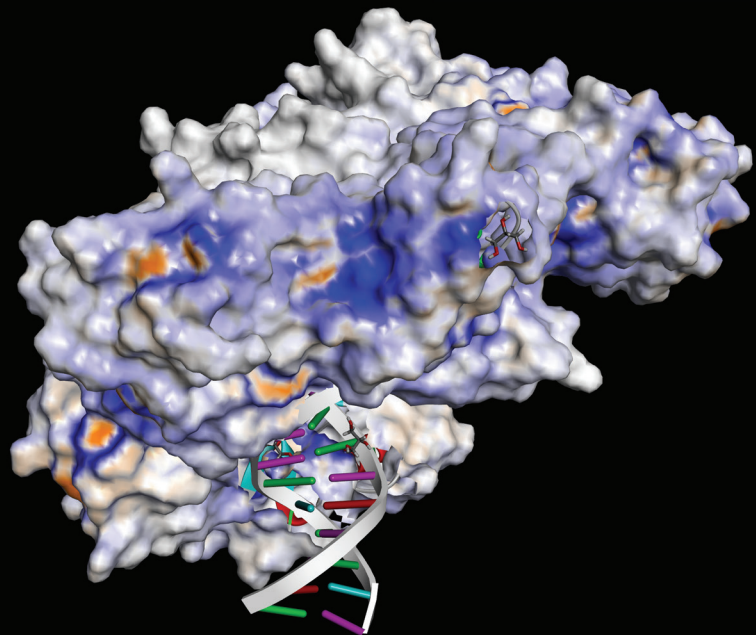
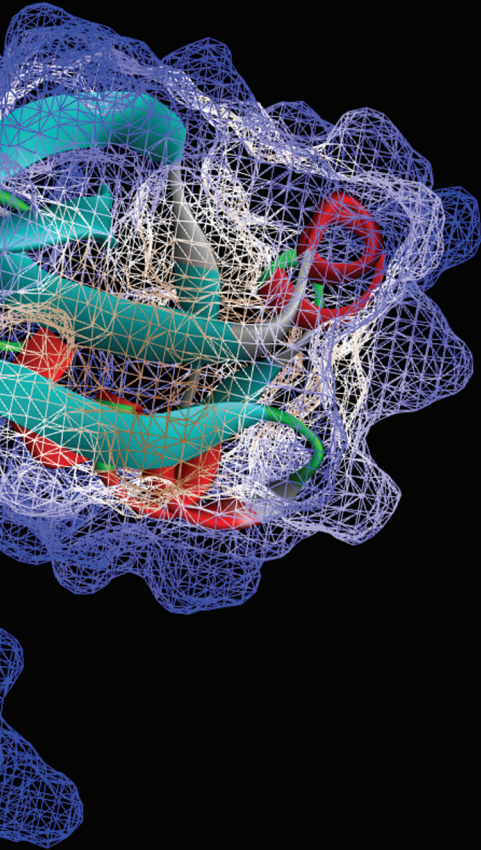
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# PROTEIN

## PROTEIN ASSAY

- AviLMW™
- AviChem™
- AviBici™





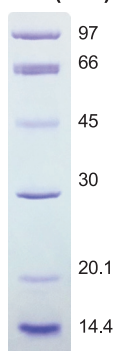
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## AviLMW™

Low Molecular Weight Protein Marker

AviLMW™ for SDS electrophoresis is a liquid mixture of six purified proteins ranging from 14,400 to 97,000 Dalton when used in denaturing polyacrylamide.

Mw (kDa) 12.5%

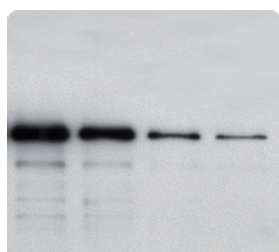


## AviChem™

Chemiluminescence Substrate

AviChem™ is recommended for horseradish peroxidase (HRP) based Western Blotting procedures. Provided as a two component system, Solution A and Solution B.

The chemiluminescent light emitting can be quantitatively detected via regular autoradiograph film, CCD camera, or chemiluminescence reading device.



### Advantages:

Suitable for western blotting and dot blot.

More sensitive than DAB and Alpha-naphthol.



# AviBici™

Bicinchoninic Acid Protein Quantification Kit

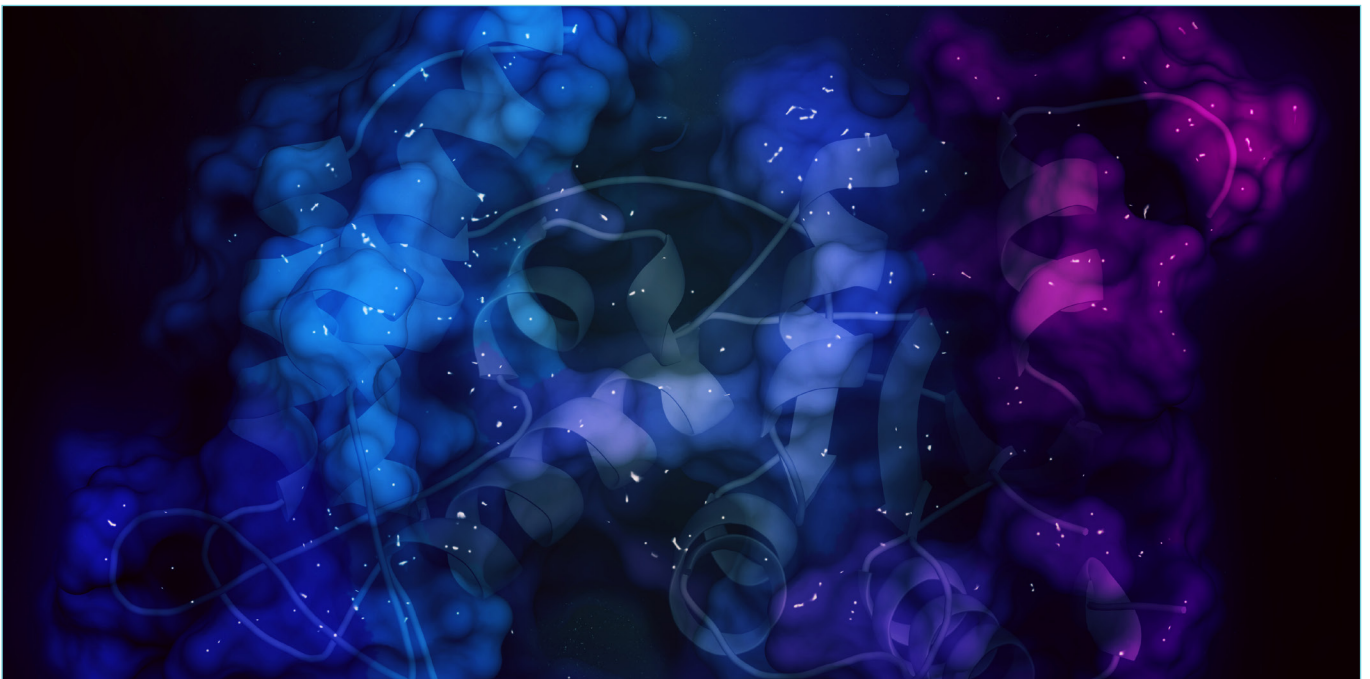
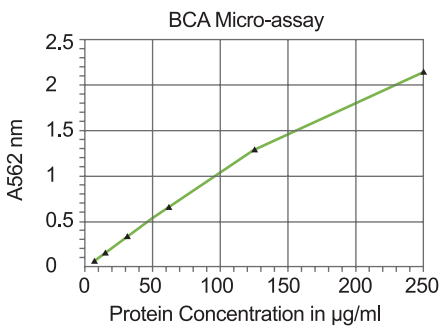
AviBici™ utilizes a copper ( $\text{Cu}_2^+$ ) salt which can be reduced to the cuprous state by protein(s). AviBici™ is suitable for measuring of protein concentration in the range of 5~1000  $\mu\text{g}/\text{ml}$ .

**Advantages:**

**Less protein-to-protein variation.**

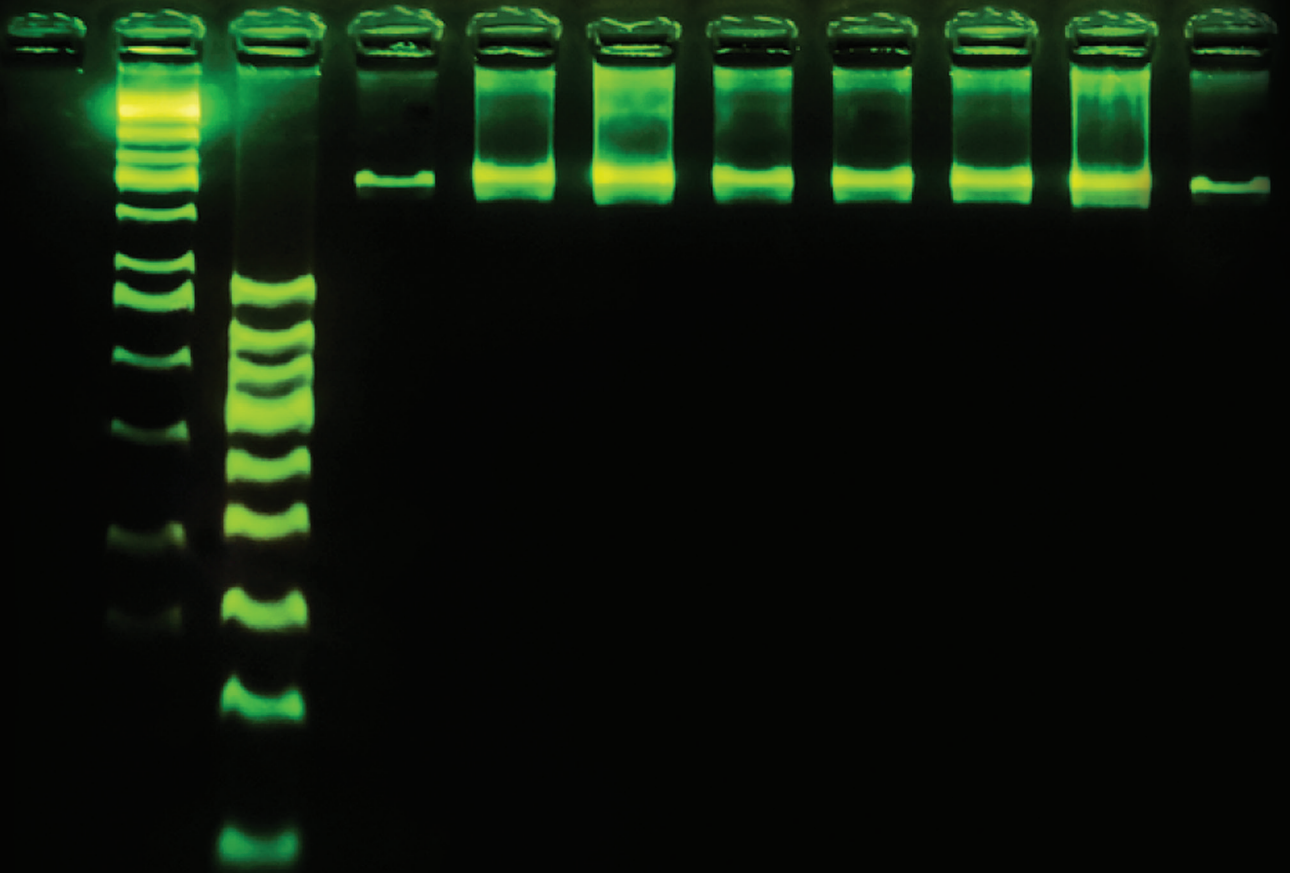
**Less affected by ionic and nonionic detergents.**

**Detection down to 5 $\mu\text{g}/\text{ml}$  with the enhanced protocol.**



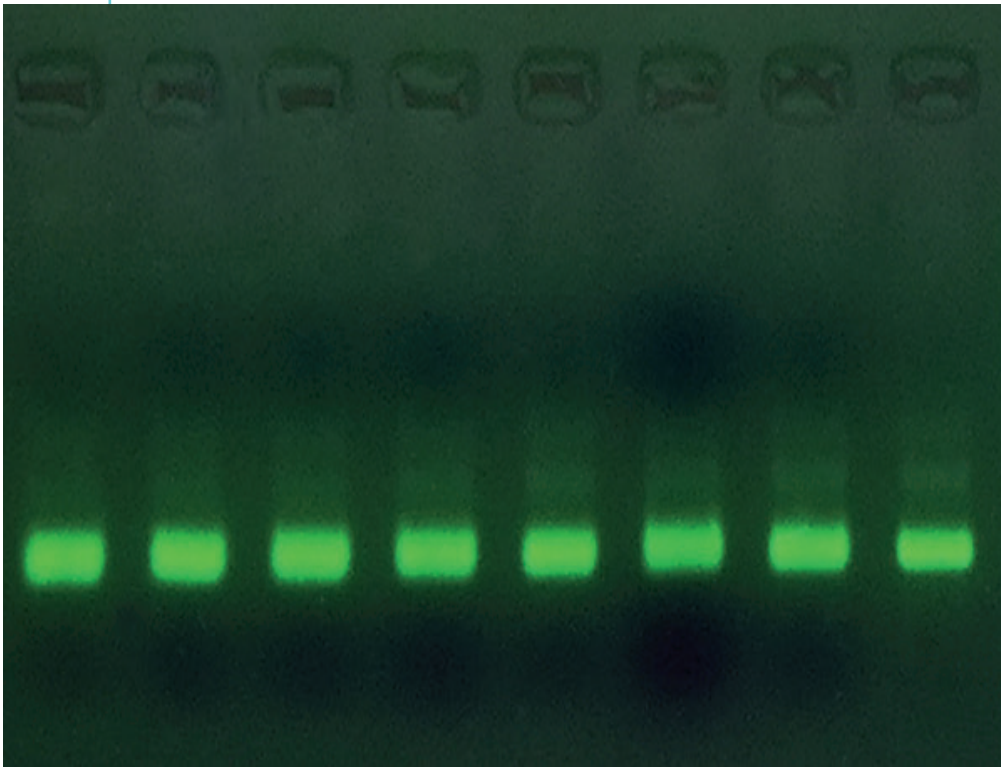


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# ELECTROPHORESIS PRODUCTS

- AviStain™
- 100bp Ladder
- AviDuo™
- AviTri™
- TBE buffer
- TAE buffer



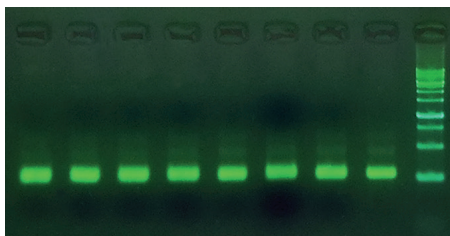


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## AviStain™

DNA Safe Dstaining Dye

AviStain™ is a new and safe nucleic acid stain, and alternative to the traditional Ethidium bromide (EB) stain for detecting double stranded DNA and RNA in Agarose gel.



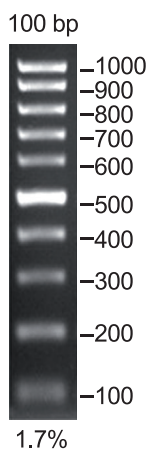
### Advantages:

- AviStain™ is as sensitive as EB
- Most economic safe nucleic acid stain

## 100bp Ladder

DNA Marker

The 100 bp DNA Marker consists of 11 DNA fragments ranging in size from reference on agarose gels, the 500 bp and 1000 bp are two to three times brighter than the other bands.



## AviDuo™

Two Colors DNA Loading Dye

AviDuo™ Contains Bromophenol blue and Xylene cyanol. This product is used for loading DNA samples into gel electrophoresis wells and tracking migration during electrophoresis.



## AviTri™

Three Colors DNA Loading Dye

AviTri™ Contains Orange G, Bromophenol blue and Xylene cyanol. This product is used for loading DNA samples into gel electrophoresis wells and tracking migration during electrophoresis.

**Advantages:**

**Orange G Dye runs faster than Bromophenol blue or Xylene cyanol FF dyes in standard agarose gels.**

**Orange G dye migrates with DNA between 10 and 20 nucleotides long.**





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## TBE buffer (10X)

Highly pure reagents have been also provided for preparation of electrophoresis buffers.

These buffers are used to prepare agarose gels and as an electrophoresis running buffer for the separation of double stranded DNA in agarose and polyacrylamide gels.



## TAE buffer (50X)

Use 50x Tris/Acetic Acid/EDTA (TAE) for electrophoresis of nucleic acids. Compatible with horizontal agarose and vertical polyacrylamide gels.

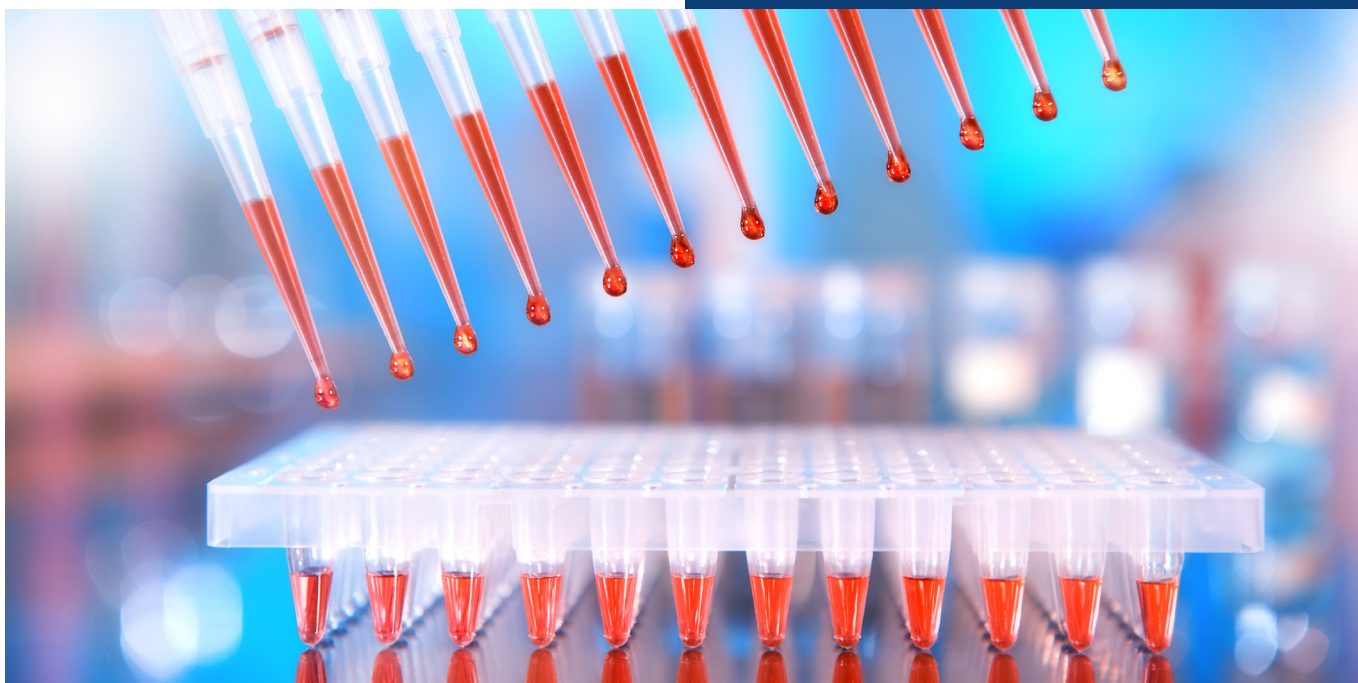
Use with non-denatured and denatured DNA and non-denatured RNA. Unlike TBE, it does not interfere with the activity of some downstream enzymes such as ligases. Made with 18 $\Omega$  water.





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