Placenta is used with activity is observed when RNase Inhibitor, Human Placenta.

In addition, no inhibition of polymerase RNase T1, S1 Nuclease, RNase H or RNase from Aspergillus. It is not effective against RNase 1, B and C (1). It is specifically inhibits ribonucleases (RNases) A, is a recombinant human placental protein which RNase Inhibitor, Human Placenta.

**Description:**

Ribonuclease Inhibitor, Human Placenta is a recombinant human placental protein which specifically inhibits ribonucleases (RNases) A, B and C (1). It is not effective against RNase 1, RNase T1, S1 Nuclease, RNase H or RNase from Aspergillus. In addition, no inhibition of polymerase activity is observed when RNase Inhibitor, Human Placenta is used with Tag DNA Polymerase, AMV or M-MuLV Reverse Transcriptases, or Phage RNA Polymerases (SP6, T7, or T3).

The 50 kDa protein inhibits RNases by binding noncovalently in a 1:1 ratio with an association constant greater than 10^{14} (2).

**Source:** An E. coli strain that carries the Ribonuclease Inhibitor gene from human placenta.

Supplied in: 50 mM KCl, 20 mM HEPES-KOH (pH 7.6), 8 mM DTT and 50% glycerol.

**Unit Definition:** One unit is defined as the amount of RNase Inhibitor, Human Placenta required to inhibit the activity of 5 ng of RNase A by 50%. Activity is measured by the inhibition of hydrolysis of cytidine 2', 3'-cyclic monophosphate by RNase A.

**Quality Control Assays**

**Endonuclease Activity:** Incubation of 200 units of RNase Inhibitor, Human Placenta with supercoiled plasmid produced no nicked molecules after a two hour incubation at 37°C as determined by gel electrophoresis.

**Ribonuclease Assay:** Incubation of 200 units of RNase Inhibitor, Human Placenta with 1 µg of RNA at 37°C for 1 hour resulted in no detectable degradation of RNA as determined by gel electrophoresis.

**DNase Assay:** Incubation of 200 units of RNase Inhibitor, Human Placenta for 1 hour at 37°C with 50 ng of radiolabeled DNA released < 3% of the radioactivity.

**Notes On Use:** Since ribonucleases typically retain activity under denaturing conditions, care must be taken to avoid denaturing RNase Inhibitor molecules which have complexed with a ribonuclease. To prevent the release of active ribonuclease, temperatures greater than 50°C and high concentrations of urea or other denaturing agents should be avoided.

**References:**