Sulfolobus DNA Polymerase IV

100 units 2,000 U/ml Lot: 0011206
RECOMBINANT Store at –20°C Exp: 6/14

Description: Sulfolobus DNA Polymerase IV is a thermostable Y-family lesion-bypass DNA Polymerase that efficiently synthesizes DNA across a variety of DNA template lesions.

Source: An E. coli strain that carries the gene encoding DNA polymerase IV from Sulfolobus islandicus.

Applications:
- Synthesis of DNA through DNA lesions (1,2)
- Repair of DNA (1)

Quality Control Assays
Exonuclease Activity: Incubation of a 50 μl reaction in ThermoPol Reaction Buffer containing a minimum of 20 units of Sulfolobus DNA Polymerase IV and 1 μg of a mixture of single and double-stranded [³H] E. coli DNA for 4 hours at either 37°C or 55°C releases < 0.1% of the total radioactivity.

Endonuclease Activity: Incubation of a 50 μl reaction in ThermoPol Reaction Buffer containing a minimum of 20 units of Sulfolobus DNA Polymerase IV with 1 μg of supercoiled φX174 DNA for 4 hours at either 37°C or 55°C results in < 10% conversion to the nicked form as determined by agarose gel electrophoresis.

Enzyme Properties
3’ → 5’ Exonuclease: No
5’ → 3’ Exonuclease: No
Strand displacement: No
Heat inactivation: No
Molecular Weight: 40,000 daltons (theoretical)

Activity in NEBuffers:
- NEBuffer 1 25%
- NEBuffer 2 100%
- NEBuffer 3 100%
- NEBuffer 4 100%

Notes:
- Activity at Different Temperatures:
  - 30°C < 5%
  - 37°C 20%
  - 45°C 40%
  - 55°C 95%
  - 65°C 90%
  - 72°C 70%
  - Half-life @ 95°C: 6 minutes

References:

(see other side)
Companion Products Sold Separately:
Magnesium Sulfate (MgSO₄) Solution
#B1003S 6.0 ml
Diluent E
#B8005S 4.0 ml
ThermoPol Reaction Buffer Pack
#B9004S 6.0 ml
ThermoPol II (Mg-free) Reaction Buffer Pack
#B9005S 6.0 ml
ThermoPol DF (Detergent-free) Reaction Buffer Pack
#B9013S 6.0 ml
Deoxynucleotide Solution Set
#N0446S 25 µmol each
Deoxynucleotide Solution Mix
#N0447S 8 µmol each
#N0447L 40 µmol each

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