DATA SHEET

Jena Bioscience

High Fidelity Polymerase

Thermostable DNA polymerase for high accuracy
Thermus species, recombinant, *E. coli*

Cat. No.	Amount
PCR-204S	100 units
PCR-204L	500 units

Unit Definition: One unit is defined as the amount of the enzyme required to catalyze the incorporation of 10 nmol of dNTP into an acid-insoluble form in 30 minutes at 74 °C.

For *in vitro* use only!

Shipping: shipped on blue ice

Storage Conditions: store at -20 °C

Additional Storage Conditions: avoid freeze/thaw cycles

Shelf Life: 12 months

Form: liquid

Concentration: 2.5 units/µl

Description:
High Fidelity Pol is based on a blend of Taq DNA polymerase and a proofreading enzyme specially designed for highly accurate and efficient amplification. It shows excellent results with extremely long (up to 30 kb), GC-rich or other difficult templates.
The enzyme blend includes a highly processive 5'→3' DNA polymerase and possesses a 5'→3' polymerization-dependent exonuclease replacement activity. Its inherent 3'→5' exonuclease proofreading activity results in a greatly increased fidelity of DNA synthesis compared to Taq polymerase.
The enzyme is highly purified and free of bacterial DNA.

Fidelity of the enzyme:
High Fidelity Pol is characterized by a 4-fold higher fidelity compared to Taq polymerase.
$ER_{\text{High Fidelity Pol}} = 3.4 \times 10^{-6}$
The error rate (ER) of a PCR reaction is calculated using the equation ER = MF/(bp x d), where MF is the mutation frequency, bp is the number of base pairs of the fragment and d is the number of doublings
(2^d = amount of product / amount of template).

Content:
High Fidelity Pol (red cap)
2.5 units/µl High Fidelity Polymerase in storage buffer

High Fidelity Buffer (green cap)
10x conc.

Recommended 50 µl PCR assay:

5 µl	10x High Fidelity Buffer	green cap
200 µM	each dNTP	-
0.2 - 0.5 µM	each Primer	-
1 - 100 ng	template DNA	-
0.5 µl (1.25 units)	High Fidelity Pol	red cap
Fill up to 50 µl	PCR-grade water	-

Please note that it is essential to add the polymerase as last component.
Recommended cycling conditions:

initial denaturation	95 °C	2 min	1x
denaturation	95 °C	20 sec	20-30x
annealing[1)]	50 - 68 °C	30 sec	20-30x
elongation[2)]	68 °C	1 min/kb	20-30x
final elongation	68 °C	1 min/kb	1x

[1)]The annealing temperature depends on the melting temperature of

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the primers used.
[2)]The elongation time depends on the length of the fragments to be amplified. A time of 1 min/kb is recommended.

For optimal specificity and amplification an individual optimization of the recommended parameters may be necessary for each new template DNA and/or primer pair.

Related Products:
Ready-to-Use Mixes / direct gel loading
Ready-to-Use Mixes
Thermophilic Polymerases
Deoxynucleotides (dNTPs)
Supplements
Primers and Oligonucleotides
DNA Ladders

Exclusively distributed in Japan by Greiner BioOne