DATA SHEET

Jena Bioscience

Phi29 DNA Polymerase

Bacillus subtilis phage *phi29*, recombinant, *E. coli*

Cat. No.	Amount
PCR-381L	5 x 200 units
PCR-381S	200 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 general laboratory use.

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Additional Storage Conditions: avoid freeze/thaw cycles

Shelf Life: 6 months

Form: liquid

Concentration: 10 units/µl

Applications:

- Rolling-circle amplification (RCA)
- Multiple displacement amplification (MDA)
- Whole genome amplification (WGA)
- Preparation of DNA template for sequencing

Description:
Phi29 DNA polymerase is a recombinant protein purified from *E. coli* cloned the gene encoding the DNA polymerase from *Phi29* phage. *Phi29* DNA polymerase is the replicative polymerase from the *Bacillus subtilis* phage *Phi29* and possesses the highest processivity and strand-displacement activity among the known DNA polymerase.
Phi29 DNA polymerase contains a 3'→5' exonuclease activity that enables proofreading capability.

Content:
***Phi29* DNA Polymerase (brown cap)**
10 units/µl *Phi29* DNA Polymerase in storage buffer
(25 mM NaH_2PO_4 pH 7.0, 150 mM NaCl, 125 mM Imidazole, 50 % Glycerol, 2.5 mM 2-Mercaptoethanol)

Reaction Buffer (purple cap)
10x conc. complete reaction buffer containing 500 mM Tris-HCl pH 7.5, 100 mM $MgCl_2$, 100 mM $(NH_2)_4SO_4$ and 40 mM DTT

component	PCR-381S	PCR-381L
Phi29 DNA Polymerase	20 µl	5 x 20 µl
Reaction Buffer	100 µl	5 x 100 µl

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Recommended Assay Set-Up

component	Cat. No.	stock conc.	final conc.	1 assay @ 20 µl
PCR-grade Water	PCR-258			fill up to 20 µl
Reaction Buffer	PCR-381 (purple cap)	10x	1x	2 µl
dNTP Mix	NU-1006	10 mM	125 µM	0.25 µl
Random Hex-amers [1)]		100 µM	5 µM	1 µl
Target DNA				1 µl
Phi29 DNA Poly-merase	PCR-381 (brown cap)	10 units/µl	5-10 units/assay	5-10 units

[1)] The use of random primers (i.g. 5'-NNNN*N*N-3') with phosphothioate protection against 3' exonuclease activity is recommended.

Incubation:
Incubate at 30 °C.

Inactivation:
Heat the mixture to 65 °C for 15 min.

Selected References:
Osama Alsmadi *et al.* (2009) Specific and complete human genome amplification with improved yield achieved by phi29 DNA polymerase and a novel primer at elevated temperature. *BMC Research Notes.* www.biomedcentral.com/1756-0500/2/48