# *Pfu* DNA Polymerase with Standard Buffer (-dNTPs)

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|---|---|
| **Product code** | 02-031　200 U　　02-031-5　200 U x 5 |
| **Size** | 200 U |
| **Storage** | -20℃ |
| **Concentration** | 2.5 U/µl |
| **Product Description** | *Pyrococcus furiosus* DNA polymerase (Pfu DNA polymerase) gene was expressed in *E.Coli* in large quantities and highly purified. The enzyme has thermostable DNA polymerase activity and 3' →5' exonuclease (proofreading) activity. The MW is 90 kDa, same as that of the natural Pfu DNA polymerase.<br>■ Pfu DNA polymerase is thermostable and has low error rates.<br>■ It is suitable for PCR and primer extension reactions that require high fidelity synthesis.<br>■　Pfu DNA polymerase-generated PCR fragments are blunt-ended. |
| **Definition of activity** | one unit is defined as the amount of enzyme that can incorporate 10 nmols of dNTPs into an acid-insoluble material in 30 minutes at 72℃ when activated salmon sperm DNA was used as template/primer. |
| **Purity** | Greater than 95% of protein determined by SDS-PAGE (CBB staining)(Fig.1)<br>The absence of endonucleases and exonucleases was confirmed. |
| **PCR Test** | Good amplification result was obtained in PCR reaction using λDNA as a template (Fig.2). |
| **Components** | ***Pfu* DNA polymerase (2.5U/µl)**: 50 mM Tris-HCl (pH 8.2), 0.1 mM EDTA, 1 mM DTT, 50% glycerol, 0.1% Tween20, 0.1% Igepal CA-630 (02-Pfd 80 µl)<br>**10 x Standard Buffer (Pfu)**: 200 mM Tris-HCl (pH 8.8), 100 mM KCl, 100 mM $(NH_4)_2SO_4$, 20 mM $MgSO_4$, 1% Triton X-100, 1 mg/ml BSA　(02-Psd　1.0 ml) |
| **Application** | ・cloning　・DNA expression・site-directed mutagenesis<br><br>General composition of PCR reaction mixture (total 50µl)<br>Pfu DNA polymerase (2.5 U/µl) (02-Pfd) 0.5 µl<br>10x Standard Buffer (Pfu) (02-Psd) 5 µl<br>2.5mM (each) dNTPs (02-Dnt) 4 µl<br>Template <500 ng<br>Primer 1 0.2～1.0 µM (final conc.)<br>Primer 2 0.2～1.0 µM (final conc.)<br>Sterile distilled water up to 50 µl |
| **Related product** | 02-001 Taq DNA polymerase with Standard Buffer (+dNTPs)<br>02-021 Pfu DNA polymerase with Standard Buffer (+dNTPs) |
| Please note: All products are FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES. NOT FOR MILITARY USE. | |


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**Data Images:** 02-031 *Pfu* DNA Polymerase with Standard Buffer (-dNTPs)

**Fig.1 SDS-PAGE of *Pfu* DNA polymerase**

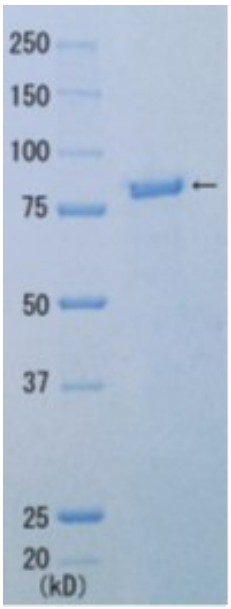
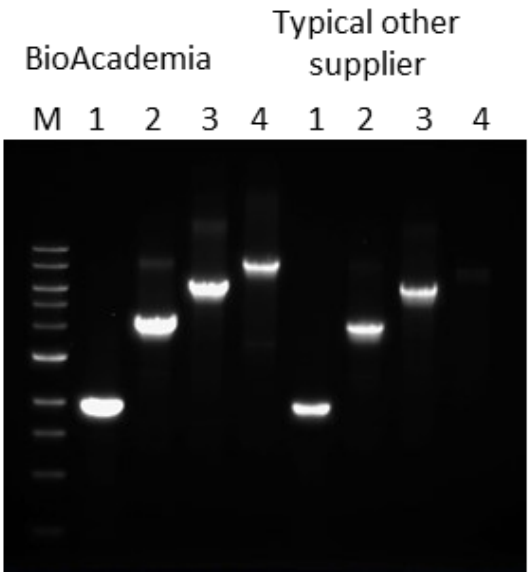



**Fig.2 Amplifacation of λDNA**

PCR condition

98°C 10sec
55°C 30sec 30cycles
72°C 10min
(2min in the case of 2kb)




Lane M : marker
1 : 2 kbp
2 : 4 kbp
3 : 6 kbp
4 : 8 kbp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