Introduction
Taq Platinum DNA Polymerase is a chemically modified hot-start polymerase with 3'–5' and 5'–3' exocleavage activity. It is inactive at ambient temperatures and must be activated by heat treatment (5-10 min at 94°C). This prevents the extension of non-specifically annealed primers or primer–dimers at low temperatures during PCR setup, and thereby greatly increases the sensitivity and specificity of PCR amplification. Taq Platinum DNA Polymerase has unique high fidelity and it possesses higher extension rate and amplification efficiency than Pfu DNA Polymerase.

Taq Platinum DNA Polymerase generates PCR products with 3'-dA overhangs that can be directly used in TA-cloning. To obtain higher cloning efficiency, however, PCR products could be purified and added 3'-d'A overhangs before TA cloning procedures.

Unit Definition
One unit of Taq DNA Polymerase is defined as the amount that incorporates 10 nmol of dNTPs into acid-insoluble material within 30 min at 74°C with activated salmon sperm DNA as the template-primer.

Storage Buffer
20 mM Tris-HCl (pH 8.0), 0.1 mM EDTA, 1 mM DTT, 100 mM KCl, Stabilizers, 50% glycerol

Example
Note: The following example only for reference, user must set up optimal reaction system according to different reaction conditions such as different templates or primers etc.

1. To set up 50 µl PCR reaction system:
   - 1 kb fragment of human genomic DNA was amplified (If use different reaction system, please proportionally increase or decrease the amount of reaction components referring to this system).
   - Template < 1 µg
   - Primer 1 (10 µM) 1 µl
   - Primer 2 (10 µM) 1 µl
   - 10× Taq Platinum Buffer 5 µl
   - dNTP Mixture (2.5 mM) 4 µl
   - Taq Platinum (2.5 U/µl) 0.5-1 µl
   - ddH2O up to 50 µl
   - Buffer I: 200 mM Tris-HCl (pH 8.4), 200 mM KCl, 100 mM (NH4)2SO4, 15 mM MgCl2, other components
   - Buffer II: 200 mM Tris-HCl (pH 8.8), 100 mM KCl, 100 mM (NH4)2SO4, 20 mM MgSO4, other components
   - Please use Buffer I at first. When DNA amplification cannot be confirmed, the result may be improved by using Buffer II.

Applications
Amplify DNA fragments from complex templates (e.g. Genome) with high fidelity, for applications such as gene cloning, Site-directed mutagenesis, SNP etc.

PCR cycle set-up:
- 94°C 5 min
- 94°C 30 sec
- 55°C 30 sec
- 72°C 2 min
- 72°C 5 min
- 30 cycles

Result detection: Load 5 µl PCR products to agarose gel for PCR detecting.