Advanced ImmunoChemical Inc.
Providing for the Advancement of Medical Science

ASSAY NOTES
Product Information

Courtesy of HyTest, Ltd

SmarTaq Polymerase
(Deoxynucleoside-triphosphate: DNA Deoxynucleosidyltransferase E.C. 2.7.7.7.)

Source	*Thermus aquaticus YT1*
Purity:	>95% (SDS-PAGE), Coomassie blue staining
Concentration:	5 U/µl
Associated activites:	Endo- and exonuclease activity not detected
Storage:	- 20 °C
Applications:	Hot-start PCR, PCR, multiplex PCR, “Real Time” PCR

SmarTaq is a *Taq* polymerase modified by blocking the specific polymerase activity with highly specific monolonal antibodies against *Taq* polymerase active site. SmarTaq remains inactive during set-up of PCR reaction at ambien temperatures (20-25 °C). An activation of enzyme occurs during the first PCR cycle by dissociation of enzyme-antibody complex when the temperature rises above 70 °C. SmarTaq significantly improves PCR results by preventing primer-dimer artifact formation and non-specific amplification. SmarTaq also gives better yields and greater specificity when amplifying difficult templates.

SmarTaq can be stored for a long period (more than 3 months) at + 4 °C. In contrast to the chemically modified Taq polymerase, SmarTaq is compatible with most of the buffers traditionally applied for amplification.

CLINICAL UTILITY

- **Highly specific PCR and multiplex**
- **High sensitivity applications**
- **Absence additional heating step for polymerase activation**

SmarTaq can be used in the following specific applications: multiplex PCR (see figure 1), amplification of complex genomic or cDNA templates, very low-copy-number targets, amplification with a large number of thermal cycles (>35) and “real-time” PCR.

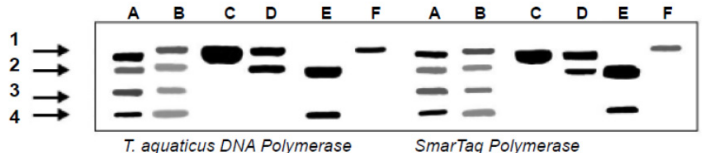

Figure 1. Application of SmarTaq Polymerase in “multiplex” PCR. *Simultaneous detection of 4 infectious DNAs in clinical samples. A and B: Positive Control (DNA Mixture), C-F: Clinical samples. 1: Ureaplasma urealyticum, 2: Mycoplasma hominis, 3. Mycoplasma genitalium, 4. Chlamydia trachomatis.*

Ordering Information:

Product	Cat #	Size
SmarTaq Polymerase	10-STP1	1000U

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