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Eurogentec

Technical **Data Sheet**

Diamond *Taq*® DNA Polymerase 5 u/µl

TAQ-I021-1000 | TAQ-I021-5000 | TAQ-I021-25000-
[1000 U] [5000 U] [5x5000 U]

Eurogentec products are sold for research or laboratory use only and are not to be administrated to humans.

Source

Diamond *Taq*® is a highly thermostable enzyme produced and purified from recombinant *Escherichia coli* bacterium containing the *Thermus aquaticus* DNA Polymerase gene.

Intended use

Diamond *Taq*® is particularly suited for PCR applications that require high sensitivity and ultra low level of bacterial & fungal DNA. The GMP manufacturing & purification processes minimize the risk of false positive results due to residual DNA contamination (bacterial or fungal). The enzyme is QC-tested to verify that < 1 fg of genomic *E. coli* DNA (or 0.2 copy) is present in a standard aliquot containing 1 unit of *Taq*. Bioburden is guaranteed ≤ 10 CFU/ml, but is typically = 0 CFU/ml.

Package contents

Reference	Units	Volume	Concentration	Volume Diamond *Taq*® reaction buffer (10 X)	Volume 25 mM $MgCl_2$
TAQ-I021-1000	1000	200 µl	5 U/µl	6 ml	6 ml
TAQ-I021-5000	5000	1 ml	5 U/µl	30 ml	30 ml

Shipping conditions

Shipping at room temperature

Storage conditions

For long term storage the Diamond Taq should be stored at a temperature between -15 °C and -25°C in a constant temperature freezer. When stored under these conditions, the components are stable for 24 months. For short term storage the Diamond Taq can be stored at 4 °C for 6 months.

Storage and dilution buffer

20 mM Tris-HCl, 1 mM DTT, 0.1 mM EDTA, 0.1 M KCl, 0.5% (v/v) Nonidet P40, 0.5% (v/v) Tween 20, 50% (v/v) glycerol, pH 8.0 (19°C).

Enzyme Specifications

Each lot of enzyme, buffer and $MgCl_2$ is functionnaly tested and quality controlled. More information about the specifications is available online.

Unit definition

One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTPs into acid insoluble form in 30 minutes at 74 °C.

Reaction Conditions (Prepare on ice)

For a 50 µl Reaction

Diamond *Taq*® Reaction Buffer (10x)	5 µl
$MgCl_2$ solution	3 µl (1.5 mM)
Diamond *Taq*®	0.4 to 1.25 units
dNTP	200 µM each dNTP
Primers	0.5 to 1µM
H_2O	As required
DNA template	As required

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Magnesium

This DNA polymerase is a magnesium-dependent enzyme. Optimal concentration ranges from 1.5 to 2.0 mM. However, best performance may require supplementing magnesium concentration in 0.5 increments, up to 4.0 mM.

Excess Mg^{2+} stabilizes the DNA double strand and consequently prevents complete denaturation of DNA, which reduces the extension yield. It may also stabilize spurious primer/template annealing, thus decreasing specificity.

Cycling conditions

Classical PCR protocol used for 500 bp lambda DNA amplification*

Steps	T° C	Time	Comments
Initial template denaturation	95°C	30 sec	Routine use
(optional)		5-10 min	Complex templates such as plant genomic DNA may require a long initial denaturation step *e.g.* 10'
PCR cycle : 25 to 35 cycles			
Denaturation	94°C	30 sec	From 5 sec for simple templates like linearized plasmids up to 1 min for plant genomic DNA
Annealing	Tm –2°C	30 sec	Optimize from Tm -4°C to +2°C
Extension	72°C	1 min/kb	
	72°C	7 min	
	4°C end temperature	-	

**Condition will vary from reaction to reaction and may need optimization for maximal performances. Duration and temperature for denaturation and annealing steps depend on the type of cycler and primers design. We advise you to check primer design and melting temperature (Tm) by using primer design software.*

Disclaimer

For further information please contact our Customer Help Desk:

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