Gradient Thermal Cycler PCR

Unique temperature control technology

Flexible Thermal Cover Structure design
Exquisite Design Small Size

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Product Description

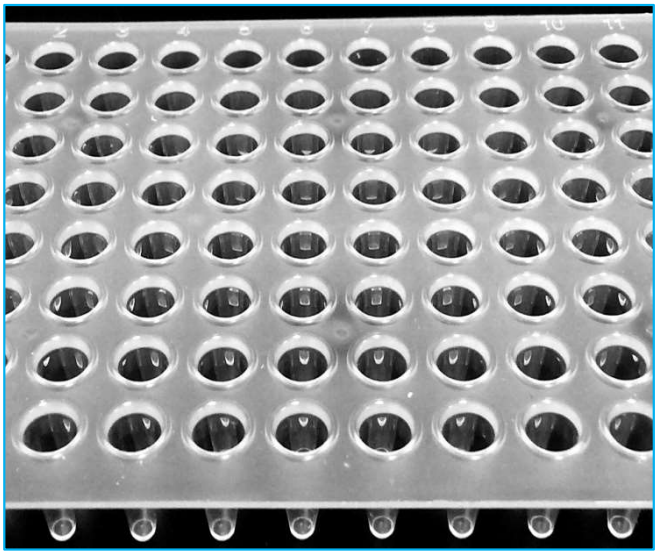
The polymerase chain reaction (PCR) has become such a ubiquitous technology that professionals from a wide variety of disciplines have begun to depend on it. When selecting a PCR thermal cycler there are three key variables to consider: the number of wells available, the temperature gradient range, and programmability. The number of wells available determines the number of combinations of temperature gradients, MgCl2 concentrations and primer levels, which are the three parameters that determine amplification optimization. Within this matrix, the temperature gradient is a key feature in optimization, especially when using heterologous primers. The thermocyclers showcased herein typically offer a maximum gradient temperature range 15 – 30° C. Gradient thermal cyclers vary in temperature ramp speed between cycling steps as well as temperature stability and heated lid control. Other specifications include ease-of-use in programmability and the ability to store programs as part of method development for all basic PCR applications, including molecular cloning and sequencing, diagnostics and forensic analysis.

Standard Features

- Supplied with a 96-Well or 384 well thermal block
- Fast, intuitive programming
- Conservation of samples after PCR (4 - 8 °C)
- Control and updates available by PC via the RS 232 connection
- More than 600 000 cycles and 680 programs available
- Automatic lid with programmable temperature (max. 98.0 °C) and pressure (max. 120N)
- Lid power: 200 W
- For the gradient option, the difference in temperature between the two sides of the thermal block may vary up to ± 20 °C

Advantages :

Gold/silver alloy in the heated block for better heat conduction
New ergonomy of the thermal block, optimization of the Peltier effect
In case of breakdown, diagnosis can be carried out via the internet
Thermal block can be interchanged with one hand
Silent (< 60 db)
Warranty : 1 years



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Technical Specification

Brand	BioGenix®		
Technology	Gradient		
Capacity	96 x 0.2 ml	48 x 0.2 ml + 30 x 0.5 ml	384 wells
Temperature Range	0 100		
Display	Soft touch display touch Screen		
Programs Avialable	60000		
Max. Heating Rate	5C/s		
Max. Cooling Rate	45C/s		
Uniformity & Accuracy	±0.1C		
Display Resolution	0.1C		
Temperature Control	Block/Tube		
Ramping Rate Adjustable	0.1 5C		
Gradient Uniformity	±0.2C		
Gradient Accuracy	±0.2C		
Gradient Temperature Range	30 100C		
Gradient Spread	1 30C		
Hot LID Temp.	30 100C		
Hot LID Height	Stepless Adjustable		
No. of Programmer	10000		
Max. No. of Step	30		
Max. No. of Cycles	99		
Time Increment/Decrement	1 sec. 9 Min 59 Sec.		
Temp. Increment/Decrement	0.1 9.9C		
Auto Data Protection	Yes		
Hold at 4C	Forever		
Dimensions (L x W x H)	380 x 240 x 260 mm		

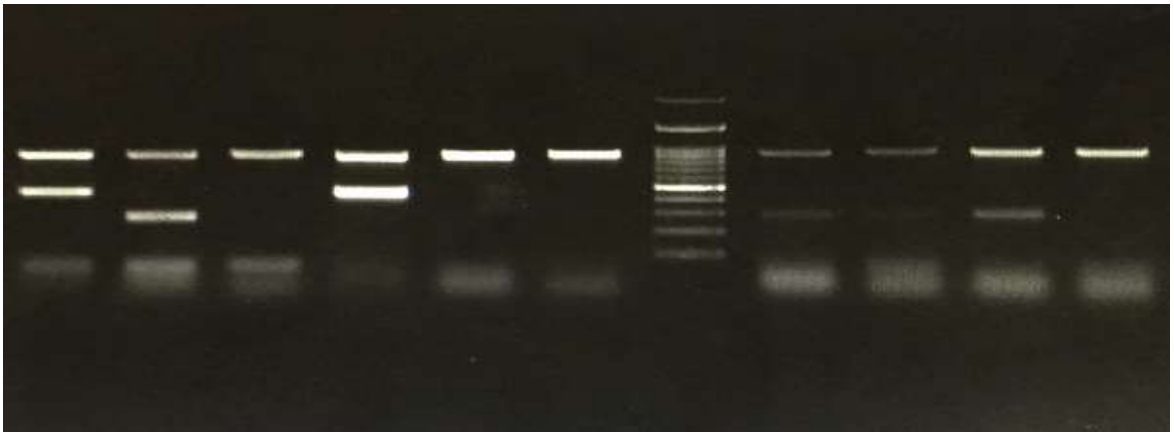
PCR results:

It has covered an amazing article on analyzing and interpreting agarose gel electrophoresis results, that portion will master you on this.

Anyway, we will explain to you how to interpret the results of PCR in brief,

Run a DNA ladder along with the PCR amplicons so that we can analyze the results.

Based on the migration of DNA fragments in the gel and our in silico PCR or primer 3 results we can assume what size our PCR amplicons are.



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Application of PCR

The PCR has numerous applications in biological research as well as diagnostics.

Diagnosis of inherited disease: PCR is most routinely used in the diagnosis of some inherited diseases such as sickle cell anemia, tha lassemia, MTHFR gene mutation, etc. This technique is appropriate for single-gene disorders. The result is 99% accurate as compared with other methods.

Microbial identification: The microbial culture technique is traditional and time-consuming and the chance of infection is also high in the case of culturing. In modern days, PCR is used in the identification of microbes. The bacteria's unique DNA sequence is targeted for the identification of particular bacteria. It will give a result within 3 to 4 hours.

Additionally, PCR is also applicable to the diagnosis of infectious diseases such as HIV or HPV. Again the method is the same as the identification of microbes. The unique DNA sequence of a particular virus is targeted for identification.

DNA fingerprinting and genetic imprinting: PCR is the first choice for DNA fingerprinting. For more detail on DNA fingerprinting read the article: DNA fingerprinting

Criminal verification, identification of a person, and material cell contamination can be detected using DNA fingerprinting.

The PCR is one of the best techniques for marker assistant selection. RFLP, AFP, RAPD, STS, VNTR, and STR are some of the PCR-based techniques.

PCR is applicable in the prenatal diagnosis of inherited disease as well.

PCR helps in detecting cancer genes and infections.

Further PCR is applicable to sex determination and sex identification.

Apart from mutation detection, PCR is useful in gene expression studies too. The expression of a particular gene can be measured using RT PCR. It is even applicable in gene cloning.

mRNA studies are also possible due to the reverse transcriptase PCR and we can calculate gene expression through it.

PCR amplification is one of the important steps in DNA sequencing and microarray.

The PCR is also useful in the validation of personalized medicines.

The PCR is used in;

- Gene editing
- Gene manipulation
- Genetic engineering
- RNAi research
- DNA and RNA quantification
- cDNA and gDNA library preparation
- Developing new assays

Limitations of PCR

Novel mutations can not be found using PCR, we have to do sequencing for that

Also, Multigenic disorders cannot be detected using PCR.

We can not identify structural and numerical chromosomal anomalies through PCR.

BioGenix®

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Dealer Details