

Molecular Biology Education

Kits for School Experiments



BIO  TED

www.bioted.es



1. Extraction & Purification of Nucleic Acids

(3-7)



2. PCR Techniques

(8-10)



3. Restriction Enzymes & Cloning

(11)



4. Electrophoresis & Applications of Molecular Biology Techniques

(12-15)



5. Molecular Biology Laboratory

(16-18)



6. Reagents

(19-20)





1. Extraction & Purification of Nucleic Acids




3

BASIC LEVEL ●○○

DANAEXTRACTOR KIT

- This practice is an introduction to molecular biology. This kit provides basic DNA extractions from animal tissues (chicken liver) and vegetables.
- The kit includes everything you need so that each student can carry out an individual practice, in the classroom itself.
- Any additional equipment or material is not required.



PRODUCT 	CONTENT 	REFERENCE 
DANAEXTRACTOR	1 Practice	DNEI-1
DANAEXTRACTOR	6 Practice	DNEI-6
LYSIS SOLUTION	200 ml	LS
SALINE SOLUTION	100 ml	PPS
ISOPROPANOL	150 ml	ISOP

INTERMEDIATE LEVEL ●●○

DANAEXTRACTOR SALIVA 2 Kit

- This kit allows students make an extraction of their own DNA quickly and easily from a small sample of his saliva, a laboratory microcentrifuge is not needed.
- To carry out this practice the laboratory has to have 20-200 microliters micropipettes and 100-1000 microliters micropipettes and their respective tips. This material also can be supplied by BIOTED.
- The remaining material necessary to carry out the practice by each student individually is included in the kit.
- The DNA appears as a strand in the solution that the student could take home.



DNES2-25



25 students

ADVANCED LEVEL ●●●

- The extraction process involves cell lysis to release nucleic acids and the inactivation of cellular nucleases (DNases and RNases) to prevent degradation of nucleic acids.
- The purification process is the separation of the nucleic acids from the other components.
- There are different techniques for purification:

A. SALTING-OUT

B. ADSORPTION CHROMATOGRAPHY





1. Extraction & Purification of Nucleic Acids

4

A. SALTING-OUT

Proteins precipitation with high salt concentrations.

ADVANCED LEVEL ●●●

● DANAGENE SALIVA KIT

This kit allows you to isolate DNA from a saliva sample of students to obtain a quality DNA for use in PCR.

- **Kit includes:** *Lysis solution, protein precipitation solution and DNA hydration solution.*
- **You need:** *Micropipettes, microtubes, microcentrifuge, isopropanol and 70% ethanol.*



0603.4



50 students



0603.41



160 students



Cell Lysis



Protein Precipitation



DNA Precipitation



DNA Wash



DNA Hydration

● DANAGENE BLOOD DNA KIT

This kit allows you to isolate DNA from a blood sample to obtain a quality DNA for use in PCR.

- **Kit includes:** *RBC solution, lysis solution, proteins precipitation solution and DNA hydration solution.*
- **You need:** *Micropipettes, microtubes, microcentrifuge, isopropanol and 70% ethanol.*



0601



100 ml/blood



0602



200 ml/blood



RBC Lysis



Cell Lysis



Protein Precipitation



DNA Precipitation



DNA Wash



DNA Hydration

● DANAGENE PLANT DNA KIT

This kit allows you to isolate DNA from different plants samples to obtain a quality DNA for use in PCR.

- **Kit includes:** *Extraction buffer, lysis solution, RNase, PVP solution, protein precipitation solution and DNA hydration solution.*
- **You need:** *Micropipettes, microtubes, microcentrifuge, isopropanol and 70% ethanol.*



0604.1



50 extractions



0604.2



200 extractions



Cell Lysis
+ PVP Solution
+ RNase



Protein Precipitation



DNA Precipitation



DNA Wash



DNA Hydration



1. Extraction & Purification of Nucleic Acids

5

B. ADSORPTION CHROMATOGRAPHY

It is based on the adsorption capacity of nucleic acids to the silica membrane in the presence of chaotropic salts which come in small columns. We have a wide range of kits that use columns, you can visit at www.danagen.es

We propose the following kits at educational level:

ADVANCED LEVEL



● DANAGENE SPIN GENOMIC DNA KIT

This kit is designed for a efficient and fast extraction of genomic DNA from high quality from a wide variety of samples including blood, cultured cells, animal tissue, mouse tails, bacteria and yeast using for this MicroSpin columns with silica membranes which selectively bind DNA.

• **Kit includes:** *Tissues lysis buffer, lysis/binding buffer, proteinase K, disinhibition buffer, wash buffer, elution buffer, and microcolumns.*

• **You need:** *Micropipettes, microtubes, microcentrifuge, incubation bath, isopropanol and 100% ethanol.*



0605.1



50 extractions



0605.2



250 extractions

● DANAGENE SPIN BLOOD DNA KIT

This kit is designed for a fast purification of pure genomic DNA from whole blood, serum, plasma, body fluids and “spots” dried blood using Microspin columns with silica membrane which selectively binds DNA. The kit uses a new formulated lysis/binding buffer specific to DNA extraction from blood samples.

• **Kit includes:** *RBC buffer, tissues lysis buffer, lysis/binding buffer, proteinase K, disinhibition buffer, wash buffer, elution buffer, and microcolumns.*

• **You need:** *Micropipettes, microtubes, microcentrifuge, incubation bath, isopropanol and 100% ethanol.*



0606.1



50 extractions



0606.2



250 extractions

● DANAGENE SPIN FOOD-STOOL kit

This kit has been optimized for an efficient and fast purification of total DNA from:

1. Fresh/frozen stool samples.

2. Various food samples (raw material and processed food).

• **Kit includes:** *CTAB Extraction Buffer Binding Buffer Proteinase K* Desinhibition Buffer* Wash Buffer*, Elution Buffer Spin Columns Collection Tubes.*

• **You need:** *Micropipettes, microtubes, microcentrifuge, incubation bath, isopropanol and 100% etanol.*



0609.1



50 extractions



0609.2



250 extractions



1. Extraction & Purification of Nucleic Acids

6

● DANAGENE FFPE DNA KIT

This kit is optimized for a fast method of DNA extraction from paraffin-embedded and formalin-fixed (FFPE) tissues. The process omits the use of flammable and malodorous xylene and d-limonene commonly used for deparaffinization, instead own deparaffinization buffer is used for the complete dissolution of paraffin to release the tissue.

• **Kit includes:** *Deparaffinization buffer, tissues lysis buffer, lysis/binding buffer, proteinase K, disinhibition buffer, wash buffer, elution buffer, and microcolumns.*

• **You need:** *Micropipettes, microtubes, microcentrifuge, incubation bath, isopropanol and 100% ethanol.*



0610.1



50 extractions

● BACTERIAL DNA EXTRACTION KIT

The objective of this practice is to introduce the principles of extracting chromosomal DNA from E. coli bacterial cells. Students learn the structure and function of nucleic acids containing a bacterium.

• **Kit includes:** *Bacterial pellets, lysis solution, proteins precipitation solution and DNA hydration solution.*

• **You need:** *Micropipettes, microtubes, microcentrifuge, incubation bath, isopropanol and 100% ethanol.*



ADNBACT



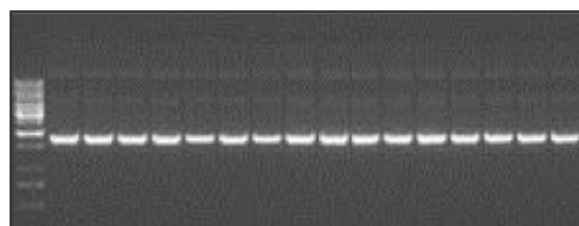
25 extractions

● PLASMID DNA EXTRACTION KIT

The objective of this practice is to introduce the principles of extracting plasmid DNA from bacterial cells. Students will learn the structure and function of DNA plasmids.

• **Kit includes:** *Bacterial pellet, resuspension buffer, lysis buffer, neutralization/binding buffer, wash buffer, elution buffer and microcolumns.*

• **You need:** *Micropipettes, microtubes, microcentrifuge & 100% ethanol.*



ADNPLASMIDO



25 extractions



1. Extraction & Purification of Nucleic Acids

7

● DANAGENE SALIVA RNA Kit

DANAGEN-BIOTED has developed a complete system that uses saliva as the sample source for expression studies.



0809.25



25 students

1. DANASALIVA RNA Sample Collection Kit

This kit provides a safe and rapid all-in-one procedure for the collection, stabilization and transportation of 1 ml saliva samples at ambient temperature that stabilizes RNA from the moment of collection for 1 month.

Saliva samples are collected by spitting inside the collection funnel which has been assembled with the collection tube. After collecting 1 ml saliva the content of saliva preservation solution are then added and mixed with the collected saliva. The saliva collection tube is sent to the laboratory for RNA isolation and analysis using the DANAGENE SALIVA RNA Kit.



2. DANAGENE SALIVA RNA Kit

This kit has been designed for a fast and efficient purification of total RNA from preserved saliva samples.

The process includes a cell lysis with proteinase K followed by a precipitation of the proteins and part of genomic DNA. Later, by a precipitation with isopropanol, total RNA is obtained, which is finally rehydrated. Finally, for removal of genomic DNA contamination is used an approach consisting of two sequential filtrations with different MiroSpin columns.

● AUTOMATED NUCLEIC ACID EXTRACTION

ZiXpress-32® is a compact and reliable automated extraction platform based on Magnetic Pillar (Rod) technology, which can extract up to 32 samples in 20 to 40 minutes with the use of Zi-Beads® magnetic particles.

It is an open and flexible platform with CE certification that allows to operate with optimized kits of pre-loaded / non-pre-loaded reagents with the protocols already introduced, offering the final user the freedom to use it with the supplied consumables or with any other standard consumable, and customize their own protocols to precisely meet any application need.



ZP011013





● EdvoCycler™ Jr.



ref. 541

- Our most economical PCR machine for 16 samples.
- Easy to use and program.
- Capacity for 16 samples of 0.2 ml.
- Does not require additional computer.
- 2 years warranty.

● EdvoCycler 2



ref. 542

- New design and more capacity of our PCR machine.
- Easy to use and program.
- Capacity for 48 samples of 0.2 ml.
- Does not require additional computer.
- 2 years warranty.

● Mini8 Plus

Portable Molecular Diagnostic
Solution qPCR Anytime / Anywhere



ref. 543

- Our Real Time PCR Machine.
- The most economical in the market.
- Easy to use and program.
- Capacity for 8 samples of 0.2 ml.
- It requires additional computer.
- 2 years warranty.





● STUDY OF VNTR HUMAN POLYMORPHISMS BY PCR

The DNA sequences that vary between individuals are known as polymorphisms. Students will prepare their own DNA from their mouth cells to be used for PCR and study the DS180 locus VNTR polymorphism.

- **Kit includes:** MIX PCR, positive control, agarose, TAE and DANABLU-FlashBlue or GELSAFE (if it is available a transilluminator).
- **You need:** Micropipettes, PCR, microtubes, and thermal cycler.



PCR1



25 students

● DETERMINING Rh FACTOR BY PCR

Students will prepare their own DNA from their buccal cells to be used for PCR. In a second session, the amplified DNA is analyzed by electrophoresis and it is determined the Rh factor.

- **Kit includes:** MIX PCR, positive control, agarose, TAE and DANABLU-FlashBlue or GELSAFE (if it is available a transilluminator).
- **You need:** Micropipettes, PCR, microtubes, and thermal cycler.



PCR2



25 students

● STUDY OF ALU HUMAN POLYMORPHISMS BY PCR

The DNA sequences that vary between individuals are known as polymorphisms.. Students will prepare their own DNA from their buccal cells to be used for PCR and study the presence or absence of Alu locus in gene activator of plasmimogen.

- **Kit includes:** MIX PCR, positive control, agarose, TAE and DANABLU-FlashBlue or GELSAFE (if it is available a transilluminator).
- **You need:** Micropipettes, PCR, microtubes, and thermal cycler.



PCR3



25 students

● PCR FROM GEN 16S rRNA OF BACTERIAL

This kit includes all material you need for the amplification of a fragment of the gene 16S rRNA of bacterial using the PCR technique. It is not necessary to isolate bacterial DNA, the kit is provided with a sample of bacterial DNA to perform the amplifications

- **Kit includes:** MIX PCR, positive control, agarose, TAE and DANABLU-FlashBlue or GELSAFE (if it is available a transilluminator).
- **You need:** Micropipettes, PCR, microtubes, and thermal cycler.



PCR4



25 students



● PCR FROM GEN 18S rRNA OF HUMAN

This kit includes all material you need for the amplification of a fragment of the gene 18S rRNA of human using the PCR technique. It is not necessary the students isolate their DNA, the kit is provided with a sample of human DNA to perform the amplifications.

- **Kit includes:** MIX PCR, positive control, agarose, TAE and DANABLU-FlashBlue or GELSAFE (if it is available a transilluminator).
- **You need:** Micropipettes, PCR, microtubes, and thermal cycler.



PCR5



25 students

● GENETICALLY MODIFIED CORN DETECTION

This kit includes all material you need for the detection of transgenic Bt corn using the PCR technique. The kit is provided with several samples of corn powder and the material to the extraction of DNA from these samples and other possible chosen by the students.

- **Kit includes:** Corn powder sample, MIX PCR, normal DNA positive control, transgenic DNA positive control, agarose, TAE and DANABLU-FlashBlue or GELSAFE (if it is available a transilluminator).
- **You need:** Micropipettes, PCR, microtubes, and thermal cycler.



PCR6



25 students

● EXPLORING THE GENETICS OF TASTE: SNP ANALYSIS OF THE PTC GENE USING PCR

DNA sequences that vary between individuals are known as polymorphisms. Students will prepare their own DNA from buccal cells that will be used to amplify the TAS2R38 gene, which is responsible for the ability to detect bitter taste. Subsequently, the purification of the PCR product will be carried out and it will be digested with the restriction enzyme HaeIII to identify the presence or absence of the SNP linked to the phenotype of detecting the bitter taste in PTC papers.

- **Kit includes:** MIX PCR, positive controls, agarose, TAE, GELSAFE, purification PCR product kit, restriction enzyme HaeIII and control papers for taste detection.
- **You need:** Micropipettes, PCR microtubes, PCR machine and waterbath.



PCR7



25 students

● INTRODUCTION TO REAL TIME PCR

This kit is an introduction to the Real Time PCR. Students will be able to prepare standard curves and quantify samples problem. The accumulating amplified product can be detected at each cycle with fluorescent dyes. Are individuals ready-to-use microtubes containing all the components needed to perform the quantitative PCR assay.

- **Kit includes:** Individual microtubes containing dehydrated mixture of specific primers and labelled probe; DNase/RNase free water; Standard Template; Standard Buffer.
- **You need:** Micropipettes, PCR microtubes, and Real Time Machine.



PCR8



25 tests



3. Restriction Enzymes & Cloning

11

● INTRODUCTION TO RESTRICTION ENZYMES

This experiment's aim is to develop the knowledge of restriction enzymes and agarose gel electrophoresis. This kit includes all material you need to conduct practice 4 times with different groups or classes. It includes introduction to the technical, practice material and teaching guide for the teacher.

The digested phage lambda DNA is supplied.

- **Kit includes:** *Samples, TAE, agarose and staining method.*
- **You need:** *Horizontal electrophoresis system, power supply, micropipet and tips, balance, microwave or hot plate, white light visualization system.*



ER1



4 practices

● DIGESTION OF PHAGE LAMBDA WITH RESTRICTION ENZYMES

This experiment's aim is to develop the knowledge of **bacteriophage lambda and agarose gel electrophoresis**. This kit includes all material you need to conduct practice 4 times with different groups or classes. It includes introduction to the technical, practice material and teaching guide for the teacher.

The phage lambda DNA and enzymes for digestion are provided. **These enzymes are special and allow digestions in just 10 minutes with what the practice can be done in a short time.**

- **Kit includes:** *Samples, TAE, agarose and staining method.*
- **You need:** *Horizontal electrophoresis system, power supply, micropipette and tips, balance, microwave or hot plate, white light visualization system.*



ER2



4 practices

● MAPPING OF RESTRICTION SITES ON PLASMID DNA

This experiment's aim is to develop the DNA mapping knowledge determining cleavage sites of the restriction enzymes into a plasmid.

Plasmid DNA is cut by various combinations of restriction enzymes and resolved by agarose gel electrophoresis.

- **Kit includes:** *Restriction enzymes, DNA plasmid samples, agarose powder, molecular weight marker, electrophoresis buffer, staining method, calibrated pipette, and microtipped transfer pipettes.*
- **You need:** *Horizontal electrophoresis system, power supply, micropipette and tips, balance, microwave or hot plate, white light visualization system.*



ER3



4 practices

● TRANSFORMATION OF E.COLI WITH GREEN FLUORESCENT PROTEIN (GFP)

In this experiment, students will explore the biological process of bacterial transformation using E. coli and plasmid DNA.

At the end of the activity, students will have experience observing and analyzing acquired traits (ampicillin resistance and fluorescence) as exhibited by transformed bacterial cells.

- **Kit includes:** *BactoBeads™ E. coli GFP Host, supercoiled pFluoroGreen™ plasmid DNA, ampicillin, IPTG, CaCl₂, Growth Additive, Broth Agar, Broth Medium for Recovery, petri plates, plastic microtipped transfer pipets, wrapped 10 ml pipette, toothpicks, inoculating loops, microcentrifuge tubes.*
- **You need:** *Automatic micropipette (5-50 µl) and tips, two waterbaths (37°C and 42°C), thermometer, incubation oven (37°C), pipette pumps, ice, marking pens, bunsen burner, microwave, hot gloves, long wave UV light.*



TRANS2



10 groups of students



1. DNA ELECTROPHORESIS

To carry out these practices is necessary to have a BASIC electrophoresis system not included in the practices kits.

● ELECTROPHORESIS BASIC KIT (CHAMBER AND POWER SUPPLY)

The electrophoresis basic equipment consists of a gel chamber (7 x 10 cm) and power supply.

By purchasing, is given away any of our kits for electrophoresis practices or of implementation to molecular biology techniques.



ELECTROPHORESIS

● AGAROSE GEL ELECTROPHORESIS. BASIC PRINCIPLES AND PRACTICE.

Simple practice to demonstrate the separation of molecules using agarose gel electrophoresis.

A simulation using dye solutions as DNA fragments that migrate in the agarose gel due to applied potential difference is performed.

- **Kit includes:** *Samples, TAE, agarose and micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



ELEC BASICA



4 practices



● AGAROSE GEL ELECTROPHORESIS. ADVANCED PRINCIPLES AND PRACTICE.

Simple practice to demonstrate the separation of DNA fragments (molecular weight markers and genomic DNA) using agarose gel electrophoresis and subsequent staining DNA with a nontoxic method practical.

This electrophoresis is similar to that is possible to do at any research laboratory.

- **Kit includes:** *Samples, TAE, agarose, micropipette and tips, and stain method.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



ELECTAVANZADA



4 practices





2. APPLICATIONS OF MOLECULAR BIOLOGY TECHNIQUES

Here's a series of kits that consist of two parts, the first one theoretical and the second practical. In the first part the teacher can explain to students what is the PCR technique and its potential biomedical applications, all these forensic and biomedical applications that are not treated in the normal agenda could be treated in depth as biomedical seminars. And the practical part where the students can simulate the results of a traditional PCR by agarose gel electrophoresis.

● SIMULATED PCR

This kit lets you show what is the PCR, how it works and its practical applications without having a PCR machine.

To do this are used dye solutions which simulate the DNA fragment. These solutions migrate in the agarose gel and intensify its color in each sample electrophoresis, simulating an increase in the amount of DNA. As in actual PCR cycles, a greater numbers of cycles give more DNA amplified, showing it as greater intensity of the bands.

- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCRSIMULADA



4 practices



● CSI TEST

This experiment introduces students in the techniques in which are used DNA and PCR for identification of a criminal from samples of hair or saliva.

In this practice the students perform a electrophoresis to simulate the result of a PCR sample. A simulation is performed using dye solutions which make the role of DNA fragment. Each student has to identify the suspect who has been at the crime scene.

- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCRDETECTIVES



4 practices





● PATERINITY TEST

This experiment introduces students in the techniques in which are used DNA and PCR for a paternity test.

A simulation is performed using dye solutions which make the role of DNA fragment. Each student has to identify the possible father in a paternity suit.

- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCRPATERNIDAD



4 practices



● DETECTION OF HEPATITIS B VIRUS BY PCR

The aim of this experiment is to introduce students to the principles and practice of Polymerase Chain Reaction (PCR) as a tool for the detection of hepatitis B virus by PCR.

Students will acquire basic knowledge about the HBV disease and how it produces hepatitis B.

- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCRVHB



4 practices



● DETECTION OF HIV BY RT-PCR

The aim of this experiment is to introduce students to the principles and practice of Polymerase Chain Reaction (PCR) as a tool for the detection of HIV by PCR.

Students will acquire basic knowledge about the HIV disease and that causes AIDS.

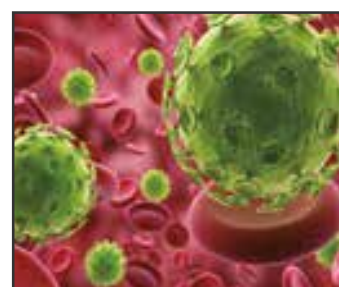
- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCRHIV



4 practices





4. Electrophoresis & Applications of Molecular Biology Techniques

15

● GENETIC DIAGNOSIS OF CANCER HEREDITARY

The objective of this experiment is to introduce students to the principles and practice of Polymerase Chain Reaction (PCR) as a tool for genetic diagnosis of cancers with a hereditary component.

Students will acquire basic knowledge about the molecular biology of cancer by studying the case of a tumor suppressor gene such as p53.

- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCRCAN



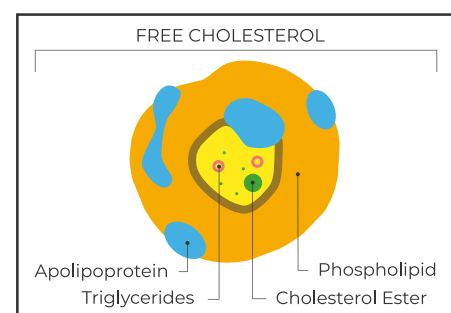
4 practices

● GENETIC DIAGNOSIS OF HYPERCHOLESTEROLAEMIA BY RFLP

The objective of this experiment is to introduce students to the principles and practice of Polymerase Chain Reaction (PCR) as a tool for genetic diagnosis related to cholesterol metabolism diseases.

Students will acquire basic knowledge about the cholesterol molecule and any associated cardiovascular disease.

- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCRCOL



4 practices

● DETECTION OF HIV BY RT-PCR

The aim of this experiment is to introduce students to the principles and practice of Polymerase Chain Reaction (PCR) as a tool for the detection of genetically modified organisms.

Students will acquire basic knowledge about the molecular biology of the obtaining process a GMO.

- **Kit includes:** *Samples, 10x TAE, agarose, micropipette and tips.*
- **You need:** *Microwave or hot plate, horizontal electrophoresis system and balance.*



PCROMG



4 practices



● DNA ELECTROPHORESIS

To carry out agarose gel electrophoresis who allows separating by sizes the nucleic acid molecules and analyzing PCR amplified products.

● M12 Complete™ Electrophoresis Package



Kit includes:

- (2) 6 Tooth Combs
- (2) 7×7 cm Gel Tray
- (2) 8/10 Tooth Combs
- (1) 7×14 cm Gel Tray
- (4) Rubber End Caps



502

● PROTEINS ELECTROPHORESIS

This apparatus perform the gel polyacrylamide electrophoresis for separating proteins of different sizes. It allows contain polyacrylamide gels (9 x 10 cm) ready.



581

● UV TRANSILLUMINATOR

It is an ultraviolet light source, where the gel is placed to visualize the nucleic acids.



558



● POWER SUPPLY

The DuoSource TM 150 unit supplies electrical power to the horizontal and vertical continuous chambers. You can select the voltage to 75 or 150 volts.



509

● WATERBATHS

3 liters waterbath with adjustable temperature, it is basic for all kinds of incubations, digests and enzymatic treatments.



3 liters
waterbath



50601003

● SHAKERS

Vortex is to homogenize samples and reagents.



Vortex



VORX-005-001

● CENTRIFUGE

The centrifugal high speed mini Microspin 12 is a compact desktop centrifuge designed for biomedical laboratories.



The microspin 12 is used for extracting samples of DNA / RNA, biological components sedimentation and for biochemical and chemical analysis microcuvette.



MCEN-15K-001



● INCUBATION OVEN

Economic bacteria incubation oven with digital temperature control in a range of +1 to 60°C.

It is ideal to grow bacteria on agar plates at 37°C or Southern and Western Blot analysis at 60°C.



INCUB

● MICROPIPETTES AND TIPS

We can supply variable volume micropipettes different games to have differentiated equipment for extraction and PCR equipment and corresponding filter tips to avoid aerosols contaminating the body of the pipette.



50601003





● BASIC ELECTROPHORESIS GELS KIT

The kit includes all the reagents you need for making 10 full electrophoresis and the DNA visualization (for 10×7 cm o 10×10 cm gels).

Two formats:

• **Kit includes:** 10 agarose pills, 150 ml 10x TAE, 500 µl loading buffer, 25 ml DANABBLUE, 100 ml FLASHBLUE.



10 full electrophoresis



EKITBLUE

• **Kit includes:** 10 agarose pills, 150 ml 10X TAE, 500 µl loading buffer, 25 µl GELSAFE Nucleic Acid Gel Stain (UV light transilluminator needed).



10 full electrophoresis



EKITSAFE

● DANABBLUE-FLASHBLUE

NON TOXIC alternative for the nucleic acids detection. Nucleic acids are blue as electrophoresis occurs. UV light transilluminator is no needed to visualize correctly the DNA, but it requires a post-staining with FlashBlue.

• **Kit includes:** 25 ml DANABBLUE, 100 ml FlashBlue.



DNB-100

● GELSAFE Nucleic Acid Gel Stain

NON TOXIC alternative to the traditional ethidium bromide (EtBr) stain for detecting nucleic acid in agarose gels and with the same sensitivity. It needs a UV light transilluminator.

• **Kit includes:** 25 ml DANABBLUE, 100 ml FlashBlue.



GELSAFE

● AGAROSE POWDER



100 gr agarose powder



DANAGAROSE100



500 gr agarose powder



DANAGAROSE500

10x TAE

Agarose electrophoresis buffer for nucleic acids, the working concentration is 1x TAE.



10x TAE · 1 liter



TAE1L



10x TAE · 500 ml



TAE500ML

● DANAPOLIMERASA HOT START

HOT START Polymerase.

HOT START Polymerase (2x) ready for use, it allows amplify any fragment so that the user only has to add water and primers. An activation step of 10 minutes at 95°C is required, in this way non-specific products as “primer-dimers” are removed. It also contains a red dye that allows direct seeding in the agarose gel without adding loading buffer.

• **Kit includes:** 1.25 ml POLYMERASE MIX.



1101



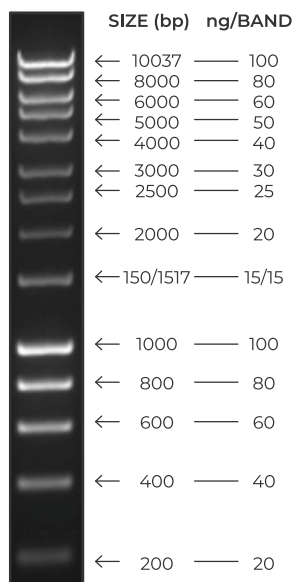
● DANAMARKER BEETHOVEN

It contains 14 regularly spaced bands of 10,000 bp to 200 bp. Each band represents an exact amount of DNA, it allows DNA quantification. It is supplied in a format "ready to use", using 20 µl in each load.

• Kit includes: 1 ml.



0405



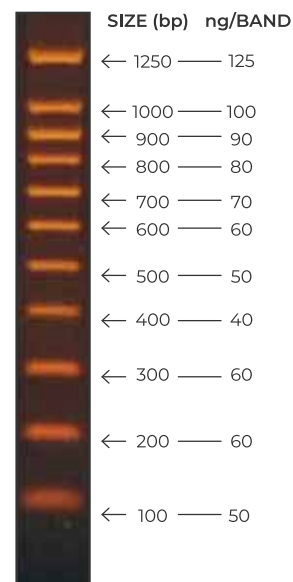
● DANAMARKER SHUMANN

It contains 11 regularly spaced bands of 1,250 bp to 100 bp. Each band represents an exact amount of DNA, it allows DNA quantification. It is supplied in a format "ready to use", using 20 µl in each load.

• Kit includes: 1 ml.



0406



Teaching the life sciences and biotechnology

BIO TED



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INNOVATIVE SME

