

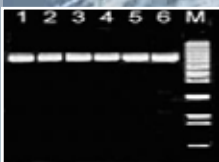
NBS Biologicals



Product
Catalogue

2015

LIFE SCIENCE



Genomics

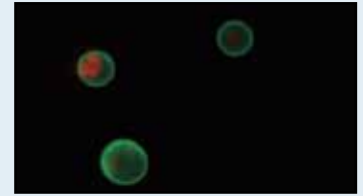
Proteomics

Cell Biology

Cell Culture

Separation

New Products for 2015



qPCR Mastermixes

High-Performance MasterMixes for Real-Time PCR, available in a wide array of options.

----- **Page 12**

Annexin V

Fluorescent-labelled Annexin V allows identification of apoptotic cells by flow cytometry or fluorescence microscopy.

----- **Page 29**

Cloning Kits & Vectors

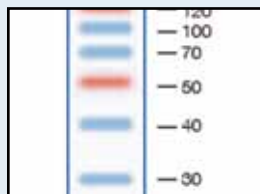
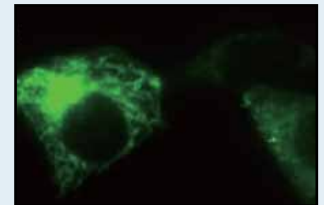
Fast and efficient, single-step cloning for PCR products.

----- **Page 19**

MitoPeDPP

Fluorescent probe for oxidative stress detection in mitochondrial research.

----- **Page 30**



Protein Markers

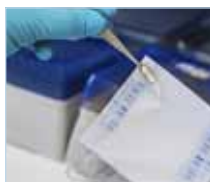
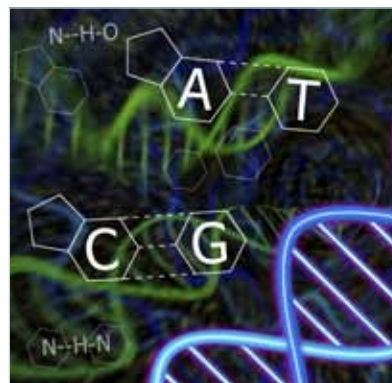
Ready-to-use protein markers, available premixed and unstained.

----- **Page 23**

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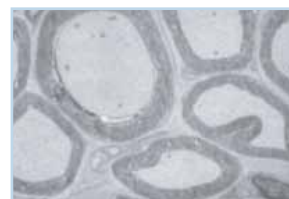


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SafeView Nucleic Acid Stain

- ✓ Non-carcinogenic DNA/RNA Stain
- ✓ Used in the Same Way as Ethidium Bromide
- ✓ Compatible with Standard Molecular Biology Applications



SafeView visualised using
optional green filter

The Safe Alternative to Ethidium Bromide

SafeView is a safe nucleic acid stain for the detection of dsDNA, ssDNA and RNA in agarose gel. This dye replaces Ethidium Bromide (toxic, potential mutagen) commonly used in agarose gel electrophoresis.

Safe to Use

SafeView is non-carcinogenic and causes significantly fewer mutations in the Ames test. SafeView also tests negative in both the mouse marrow chromophilous erythrocyte micronucleus test and mouse spermary spermatocyte chromosomal aberration test.

Sensitive & Convenient

SafeView emits green fluorescence when bound to dsDNA, ssDNA and RNA and has a fluorescence excitation maxima when bound to nucleic acid at approx.290-320nm, emitting at 490nm.



than Invitrogen Sybr® Safe stain*



Ordering Information

Cat #	Description	Pack Size	Price
NBS-SV1	SafeView Nucleic Acid Stain	1ml	£42.00
NBS-SV5	SafeView Nucleic Acid Stain	5 x 1ml	£179.00

* Comparison of smallest pack sizes, per ml.
Invitrogen Sybr® Safe DNA gel stain (400µl), £49.27 - lifetechnologies.com, 05/01/2015

SafeView Plus Nucleic Acid Stain

High Sensitivity SafeView for Post-Staining Agarose & Polyacrylamide Gels

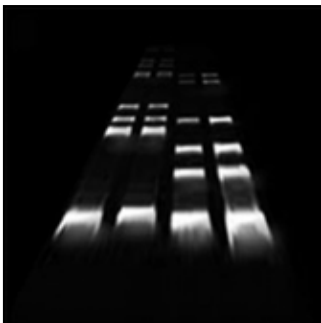
- ✓ Non-carcinogenic DNA/RNA Stain
- ✓ Compatible with Standard Molecular Biology Applications
- ✓ Can be used for Agarose and Polyacrylamide Gel electrophoresis

SafeView Plus represents the newest generation of nucleic acid stains. It can be safely and widely used for the visualisation of double-stranded DNA, single-stranded DNA, and RNA in agarose and polyacrylamide gels. SafeView Plus was developed to replace toxic ethidium bromide (EB, a potent mutagen) and has higher sensitivity and enhanced performance than SafeView (NBS-SV). SafeView Plus is used as a substitute for ethidium bromide for post electrophoresis DNA staining. There is no need to add it to the electrophoresis buffer or casting gel. The fluorescence has an excitation maxima at approximately 490nm.

SafeWhite Nucleic Acid Stain

Ethidium Bromide, Dropper Bottle

Our Ethidium Bromide is provided in a ready-to-use dropper bottle (0.625mg/ml) for maximum convenience and safety. Use one drop per 50ml of agarose gel and running buffer or staining solution.



Ordering Information

Cat #	Description	Pack Size	Price
NBS-SVP	SafeView Plus Nucleic Acid Stain	1.0 ml (10,000X)	£57.00
NBS-SW1	SafeWhite Nucleic Acid Stain	1ml	£42.00
NBS-SW5	SafeWhite Nucleic Acid Stain	5 x 1ml	£179.00

Destaining Bags

Easy Removal of Ethidium Bromide from Solution

- ✓ Remove upto 5µg of Ethidium Bromide in an Overnight Treatment
- ✓ Can also be used for other Biological Dyes, eg. Coomassie Blue
- ✓ Easy Disposal of used Bag with Routine Biological Waste

Introducing our new silica based destaining bag. These bags will selectively remove Ethidium Bromide and Coomassie Blue from solution in an overnight treatment, thus eliminating the need to dispose of electrophoresis buffers as hazardous waste. The specially optimised absorbent mixture retains the dye in the bag for removal and incineration.

Ethidium Bromide

Ethidium Bromide, Dropper Bottle

Our Ethidium Bromide is provided in a ready-to-use dropper bottle (0.625mg/ml) for maximum convenience and safety. Use one drop per 50ml of agarose gel and running buffer or staining solution.



Ordering Information

Cat #	Description	Pack Size	Price
NBS-DS25	EtBr Destaining Bags	25 Bags	£57.00
NBS-DB05	Ethidium Bromide, Dropper Bottle (0.625mg/ml)	5ml	£19.00
NBS-DB10	Ethidium Bromide, Dropper Bottle (0.625mg/ml)	10ml	£31.00

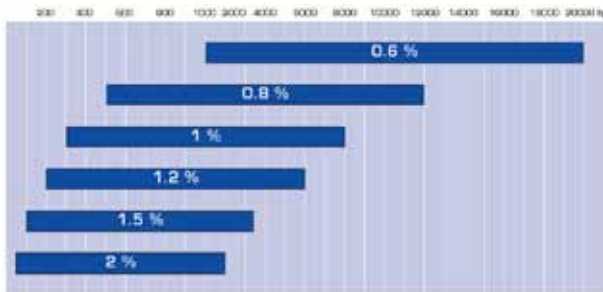
Agarose - Low EEO

- ✓ Low EEO (<0.13)
- ✓ High Mechanical Strength
- ✓ Low Absorption of Staining Reagents

All-Purpose Agarose for Electrophoresis

Agarose - *Low EEO* is an all-purpose agarose designed for nucleic acid analytical work, blotting and routine applications. This agarose has a low EEO allowing for shorter electrophoretic runs without compromising resolution, while the gel has a high mechanical resistance for easier and more reliable handling.

Agarose - *Low EEO* has low absorption of staining agents and high thermal stability due to high hysteresis (difference between gelling and melting temperatures), it also has excellent transparency of the gel, high visibility and exhibits low DNA binding and gel background.



Left: Separation Range Chart for Agarose - Low EEO
Separation ranges depend on the choice of buffer. These ranges were determined in presence of TAE buffer. Migration in TBE buffer is slower, therefore lower concentrations can be used to obtain similar ranges.

**60%
Cheaper**
than Lonza SeaKem® LE Agarose*

Top Tip

Agarose - *Low EEO* has a gel strength of >2500 when used at 1.5% concentration and can therefore be used in place of a speciality high strength agarose!

Ordering Information

Cat #	Description	Pack Size	Price
NBS-AG100	Agarose - <i>Low EEO</i>	100g	£46.00
NBS-AG500	Agarose - <i>Low EEO</i>	500g	£171.00

* Comparison of smallest pack sizes.
Lonza Seakem® LE Agarose (100g), £115.00 - scientificlabs.co.uk, 05/01/2015.



1% Agarose - Low EEO Gel (stained using EtBr)

TBE (TRIS-Borate-EDTA) Buffer

- ✓ High Ionic Strength
- ✓ High Buffering Capacity

Tris-Borate EDTA (TBE) is used both in PAGE and agarose gel electrophoresis for DNA and proteins. Our TBE is supplied as 10x concentrate (dilute to strength) and is used within the gel and as a running buffer.

TAE (TRIS-Acetate-EDTA) Buffer

- ✓ Low Ionic Strength
- ✓ Better Resolution of Large DNA Fragments

Tris-Acetate EDTA (TAE) is used as a running buffer in both PAGE and agarose electrophoresis. Our TAE is supplied as 25x and 50x concentrates which are diluted to working strength.

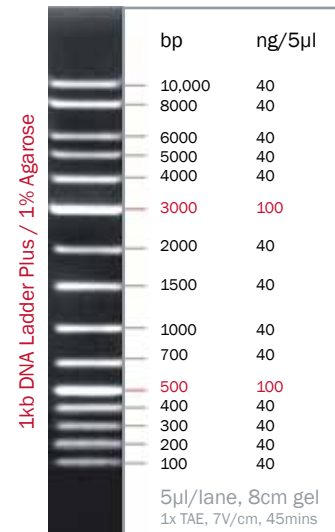
Ordering Information

<i>Cat #</i>	<i>Description</i>	<i>Pack Size</i>	<i>Price</i>
NBS-6000-10	TBE Buffer, 10x Solution	1L	£28.00
NBS-6000-50	TBE Buffer, 10x Solution	5L	£64.00
NBS-6001-10	TAE Buffer, 50x Solution	1L	£41.00
NBS-6001-50	TAE Buffer, 50x Solution	5L	£108.00

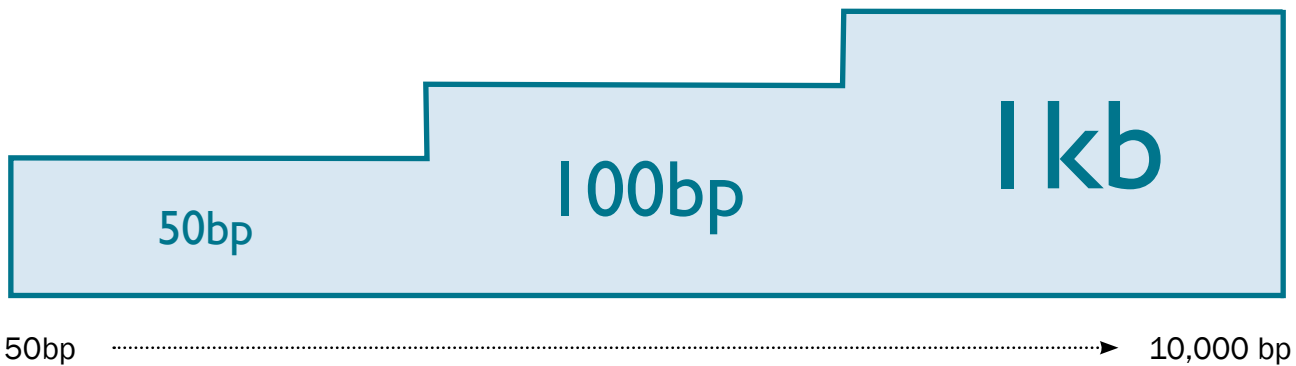
DNA Ladder Plus

Ready-to-Use Ladders for Electrophoresis

- ✓ Bright, Sharp Bands for Accurate Sizing
- ✓ Precise DNA Concentrations
- ✓ Ready-to-Use



Introducing our new range of ready to use DNA ladders for electrophoresis. These extended range ladders are available in 50bp, 100bp and 1kb size and offer precise standard and bright reference bands. All fragments are precisely mixed and quantified during production and the ladders are supplied premixed with loading dye.



Ladder Size Ranges

50bp Ladder Plus	50 - 1000bp
100bp Ladder Plus	100 - 3000bp
1kb Ladder Plus	100 - 10,000bp

Ordering Information

Cat #	Description	Pack Size	Price
NBS-LP50	DNA Ladder Plus, 50bp	50µg	£35.00
NBS-LP100	DNA Ladder Plus, 100bp	50µg	£35.00
NBS-LP1K	DNA Ladder Plus, 1kb	50µg	£35.00

SafeView/BesTaq Mastermix

Convenient All-in-One PCR Mastermix

- ✓ Everything you Need for PCR and Instant Visualisation in a Single Solution
- ✓ Incorporates High Fidelity Polymerase and Safe DNA Stain

SafeView/Bestaq 2X PCR MasterMix is a ready-to-use mixture containing BesTaq DNA Polymerase (page 11), deoxynucleotides, and reaction buffer in a 2X concentration. It contains all the necessary reagents for amplification of DNA along with an inert blue (loading) dye, proprietary SafeView reagent (page 4), a stabiliser which allows for direct loading of the final products onto an ethidium-bromide-free gel for analysis and a Safe Marker Stain which is added to your molecular weight markers for visualisation.

Safe Visualisation

SafeView is proven to be non-carcinogenic by the Ames-test. The results are negative in both the mouse marrow chromophilous erythrocyte micronucleus and mouse spermary spermatocyte chromosomal aberration tests.

High Fidelity Taq Polymerase

BesTaq, with its superior fidelity and extreme robustness, is one of the best performing DNA polymerases available on the market. With its monomeric, unique topological structure, BesTaq DNA Polymerase possesses enhanced processivity, elevated yield, boosted speed, extended amplification length, and improved difficult template tolerance. This high-performing polymerase and its mastermix are the ideal choice for any PCR application, especially for cloning difficult templates, amplifying A/T- and G/C- rich sequences, and replicating long amplicons. With over 50X more accuracy than Taq DNA polymerase, BesTaq DNA Polymerase and its mastermix can consolidate all PCR protocols and reactions into one simple, efficient, and extremely reliable PCR system. BesTaq DNA Polymerase generates blunt-end PCR products and has both 5'-3' polymerase activity as well as 3'-5' proofreading exonuclease activity.

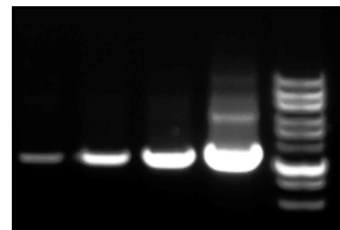
The use of Bestaq DNA Polymerase in this MasterMix offers:

- High-speed PCR without compromising accuracy
- High-processivity to reduce reaction time by up to 70%
- Robust and high yield across a wide range of templates
- Efficient amplification of DNA templates up to 15kb

Ordering Information

Cat #	Description	Pack Size	Price
NBS-SMM	SafeView/BesTaq PCR Mastermix	200 rxn	£199.00

BesTaq DNA Polymerase



BesTaq DNA polymerase is a polymerase with superior fidelity and robustness. The unique, single-enzyme structure is optimised for difficult templates and results in enhanced yield, speed and amplification length.

BesTaq is designed for all PCR applications and particularly suited for cloning difficult (both AT- and GC-rich) and long amplicons. It has one of the highest fidelities available on the market (over 50X better than Taq DNA polymerase) and will generate blunt-end products with 5'-3' polymerase activity and 3'-5' proofreading exonuclease activity.

EasyScript RTase

- ✓ Reliable - Will work for any cDNA synthesis application
- ✓ High Yield - Superior to competitor RNase enzymes

EasyScript RTase is derived through a series of rational and iterative 'mutation - function' optimisations and represents a much superior version of the native RTase enzyme. Deliberate mutations within the RNase H domain of EasyScript mediate abrogation of the RNase H activity associated with the enzyme. Removal of RNase H activity helps to prevent RNA degradation during first strand cDNA synthesis thereby allowing maximal performance in cDNA synthesis.

EasyScript is also available in 'plus' form which has been bioengineered to perform optimally at elevated temperatures (50-55°C). EasyScript Plus represents a molecular innovation that offers an easy and reliable one step solution to cDNA synthesis from difficult RNA templates. Employment of a higher than average reaction temperature mitigates the problems associated with secondary structures and high GC content in the starting template. Additionally this feature also allows for synthesis of longer transcripts, in this case, up to 15kb in length.

Ordering Information

Cat #	Description	Pack Size	Price
NBS-BT10	BesTaq DNA Polymerase	250U	£67.00
NBS-BT40	BesTaq DNA Polymerase	1000U	£176.00
G232	EasyScript Reverse Transcriptase	100 rxns	£94.00
G237	EasyScript Plus Reverse Transcriptase	100 rxns	£141.00
G234	EasyScript cDNA Synthesis Kit	100 rxns	£128.00
G236	EasyScript Plus cDNA Synthesis Kit	100 rxns	£203.00

Also Available

Spin Column PCR Purification Kit
[see page 14](#)

High yield DNA Spin Column kit,
competitively priced and ready-to-use!



Genomics

Proteomics

Cell Biology

Cell Culture

Separation

EvaGreen Express qPCR MasterMix

Guaranteed High-Performance Real-Time PCR

- ✓ Extremely Rapid Activation – Only 30 Seconds!
- ✓ Compatible with most real-time PCR instruments
- ✓ Ultra-fast qPCR Thermal Cycling – 10 Second Annealing/Elongation Time

Guaranteed high-performance real-time PCR using EvaGreen Express 2X qPCR MasterMix. EvaGreen Express 2X qPCR MasterMix provides all ingredients necessary for extremely rapid quantitative PCR in a premixed and optimised format. Available with the option of ROX or fluorescein as the internal passive reference dye, EvaGreen Express 2X qPCR MasterMix offers unparalleled performance in sensitivity, signal-to-noise ratio, and complete elimination of primer dimers.

The EvaGreen and TaqProbe Selection Guides are available to view on our website, www.nbsbio.co.uk

TaqProbe qPCR MasterMix

Ultimate sensitivity in real-time PCR

Ultimate sensitivity in real-time PCR with TaqProbe 2X qPCR MasterMix. TaqProbe 2X qPCR MasterMix is designed for high throughput quantitative PCR using TaqMan probe-based chemistry. Available with the option of ROX or fluorescein as the internal passive reference dye, TaqProbe 2X qPCR MasterMix offers superb performance in sensitivity and signal-to-noise ratio. The multiplex formulation supports quantitative amplification and detection of up to four targets simultaneously with consistent and reliable results.

Ordering Information

Cat #	Description	Pack Size	Price
MasterMix-ER	EvaGreen Express 2X qPCR MasterMix-ROX	4x1.25ml - 500 reactions (20 µl)	£158.00
MasterMix-EL	EvaGreen Express 2X qPCR MasterMix-Low ROX	4x1.25ml - 500 reactions (20 µl)	£158.00
MasterMix-EC	EvaGreen Express 2X qPCR MasterMix-iCycler	4x1.25ml - 500 reactions (20 µl)	£158.00
MasterMix-ES	EvaGreen Express 2X qPCR MasterMix-No Dye	4x1.25ml - 500 reactions (20 µl)	£158.00
MasterMix-P	TaqProbe 2X qPCR MasterMix-ROX	4x1.25ml - 500 reactions (20 µl)	£144.00
MasterMix-PL	TaqProbe 2X qPCR MasterMix-Low ROX	4x1.25ml - 500 reactions (20 µl)	£144.00
MasterMix-PC	TaqProbe 2X qPCR MasterMix-iCycler	4x1.25ml - 500 reactions (20 µl)	£144.00
MasterMix-PS	TaqProbe 2X qPCR MasterMix-No Dye	4x1.25ml - 500 reactions (20 µl)	£144.00
MasterMix-PM	TaqProbe 2X qPCR MasterMix-Multiplex	4x1.25ml - 500 reactions (20 µl)	£144.00

Spin/96-well Purification

DNA Cleanup Kits - Page 14
 Plasmid & Genomic Kits - Page 15
 RNA Miniprep & All-in-One Kits - Page 16

3 for 2

on all Spin Column & 96-well Kits*



Our Spin Column and 96-Well Kits have been designed for fast, high quality extraction & purification of DNA, RNA & Protein from a variety of sources.

In addition to our popular DNA Cleanup kits (outlined on page 14) we also have an extensive range of Plasmid & Genomic kits (page 15) and RNA & All-in-One kits (page 16).

Featured
for
2015

Spin Column Genomic DNA Miniprep Kit

— Page 15

Spin Column All-in-One Miniprep Kit

— Page 16

Spin Column RNA Miniprep Kit

— Page 16

PCR Product
 Enzymatic Reactions
 Solubilised Gel Slice
 Lysed Cells



Bind



Wash



Elute



Pure DNA



Mini Spin Columns

We now supply spin columns/collection tubes separately, these are compatible with our own range of Spin Column kits as well as those of other brands!

Ordering Information

Cat #	Description	Pack Size	Price
NBS-5005	Mini Spin Columns (DNA)	100 pcs	£29.00
NBS-5008	Mini Spin Columns (RNA)	100 pcs	£30.00
NBS-5006	96-Well Filter Plates	12 pcs	£43.00

* Cheapest item free, does not include separate Spin Columns (DNA or RNA) or plates.

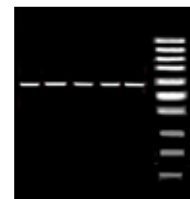
DNA Cleanup Kits

3 for 2

on all Spin Column & 96-well Kits*

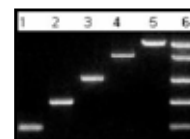
PCR Purification Kit

This kit utilises membrane technology which selectively adsorbs up to 10µg PCR products or DNA fragments in the presence of a specialised binding buffer. Primers (<40-mer), nucleotides, enzymes, mineral oil and all other impurities are not able to bind and are hence eliminated from the column. PCR products or DNA fragments are readily eluted in the included buffer.



Gel Extraction Kit

This kit provides a simple and efficient method for DNA extraction from agarose gel. It is also an ideal tool to desalt the solution as well as to remove residual organic solvents or unincorporated nucleotides or primers (<40-mer) from reaction mixture containing DNA.



Reaction Cleanup Kit

This DNA Cleanup kit provides a simple, efficient method for purification of DNA fragments from various enzymatic reactions (eg. cDNA synthesis, ligation, restriction digestions, tailing etc.). It is also an ideal tool to desalt the solution of DNA as well as to remove residual organic solvents or unincorporated nucleotides or primers (<40-mer) from reaction mixture.



Ordering Information

Cat #	Description	Pack Size	Price
NBS-363	Spin Column PCR Purification Kit	50 preps	£62.00
NBS-664	Spin Column PCR Purification Kit	250 preps	£269.00
NBS-353	Spin Column Gel Extraction Kit	50 preps	£62.00
NBS-654	Spin Column Gel Extraction Kit	250 preps	£269.00
NBS-367	Spin Column Reaction Cleanup Kit	50 preps	£62.00
NBS-668	Spin Column Reaction Cleanup Kit	250 preps	£269.00

Cat #	Description	Pack Size	Price
NBS-3652	96-Well PCR Purification Kit	2 plates	£221.00
NBS-365	96-Well PCR Purification Kit	5 plates	£442.00
NBS-3692	96 Well Reaction Cleanup Kit	2 plates	£221.00
NBS-369	96 Well Reaction Cleanup Kit	5 plates	£442.00

See Page 15 for Plasmid and Genomic DNA Kits and Page 14 for our All-in-One Kit.

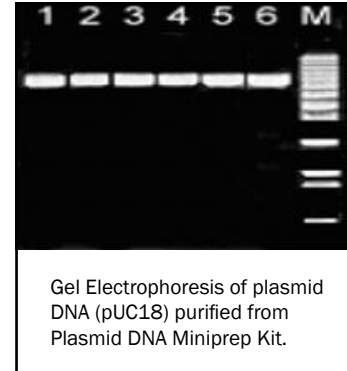
* Cheapest item free, does not include separate Spin Columns (DNA or RNA) or plates.

DNA Plasmid/Genomic Kits

Plasmid DNA Miniprep Kit

Fast and Simple Preparation of high quality DNA

This kit provides a simple and efficient method for mini plasmid DNA purification from bacterial culture. Plasmid DNA is selectively adsorbed by the spin column and impurities such as proteins, salts and nucleotides are washed away. The whole procedure takes about 12 minutes and no phenol/chloroform or ethanol precipitations are required.



Genomic DNA Miniprep Kit

Purification of gDNA from Multiple Sample Sources

This kit allows for the purification of high quality genomic DNA with a molecular weight >20kb. The spin columns provide a fast and easy purification with the purified DNA ideally prepared for standard downstream reactions, including PCR, restriction digestions and hybridisations.

3 for 2
on all Spin Column & 96-well Kits*

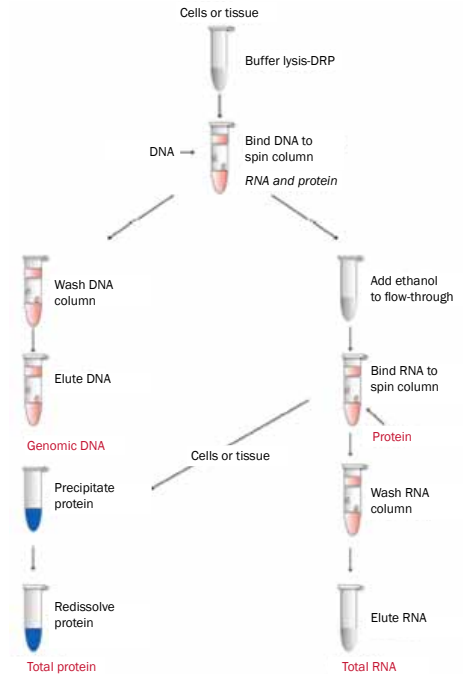
Cat #	Description	Pack Size	Price
NBS-413	Spin Column Plasmid DNA Miniprep Kit	50 preps	£62.00
NBS-614	Spin Column Plasmid DNA Miniprep Kit	250 preps	£269.00
NBS-88503	Spin Column Genomic DNA Miniprep Kit	50 preps	£156.00
NBS-88505	Spin Column Genomic DNA Miniprep Kit	250 preps	£622.00
NBS-4152	96 Well Plasmid DNA Miniprep Kit	2 plates	£221.00
NBS-415	96 Well Plasmid DNA Miniprep Kit	5 plates	£442.00
NBS-1292	96 Well Bacterial Genomic DNA Miniprep Kit	2 Plates	£269.00
NBS-1295	96 Well Bacterial Genomic DNA Miniprep Kit	5 Plates	£615.00

* Cheapest item free, does not include separate Spin Columns (DNA or RNA) or plates.

All-in-One Miniprep Kit

- ✓ *All-in-One Purification of DNA, RNA and Protein from One Sample*

The *Spin Column All-in-One Miniprep Kit* allows you to simultaneously isolate DNA, RNA and Protein from a single sample. Purification is achieved within 1 hour and all standard downstream applications are supported.



Simple & Efficient RNA Extraction from Bacterial Culture

RNA Miniprep Kit

- ✓ High Yield & Reproducibility
- ✓ Purification in Under 30 mins

Our *Spin Column RNA Miniprep Kit* allows for high quality purification of RNA from animal cells and tissues. The gDNA eliminator column allows DNA contamination to be eliminated during RNA purification so the purified RNA is ideally prepared for downstream applications that require little to no DNA contamination (eg. Real time PCR).

3 for 2
on all Spin Column & 96-well Kits*

Ordering Information

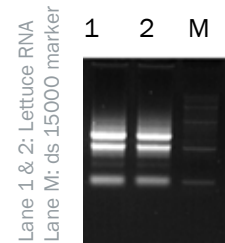
Cat #	Description	Pack Size	Price
NBS-88003	Spin Column All-in-One Miniprep Kit	50 preps	£186.00
NBS-88203	Spin Column DNA/RNA Miniprep Kit	50 preps	£168.00
NBS-88133	Spin Column RNA Miniprep Kit	50 preps	£186.00
NBS-88136	Spin Column RNA Miniprep Kit	250 preps	£742.00

* Cheapest item free, does not include separate Spin Columns (DNA or RNA) or plates.

TRI-isolate RNA Reagent

Isolation of Total RNA from a Variety of Sources

- ✓ Simple, Reliable and Rapid RNA Isolation
- ✓ Isolation from a Wide Variety of Sources
- ✓ Stable Yield (RNA Integrity Maintained)



Extraction of RNA from lettuce using TRI-isolate

The TRI-isolate RNA Purification Kit provides a simple, reliable, and rapid method for isolating high-quality total RNA from a wide variety of sample sources, including animal and plant cells and tissue, bacteria, and yeast. The kit utilises the strong lysis capability of TRI-isolate Reagent, this maintains the integrity of the RNA, while disrupting cells and dissolving cell components.

How does the reagent work?

The addition of chloroform followed by centrifugation, separates the solution into an aqueous phase and an organic phase. RNA remains exclusively in the aqueous phase. After transfer of the aqueous phase, the RNA is recovered by precipitation with isopropyl alcohol. After removal of the aqueous phase, the DNA and proteins in the sample can be recovered by sequential precipitation. Precipitation with ethanol yields DNA from the interphase, and an additional precipitation with isopropyl alcohol yields proteins from the organic phase. Copurification of the DNA may be useful for normalising RNA yields from sample to sample. Total RNA isolated by TRI-isolate Reagent is free of protein and DNA contamination. It can be used for Northern blot analysis, dot blot hybridisation, poly (A)+ selection, in vitro translation, RNase protection assay, and molecular cloning.

Reagents required, but not supplied:

- Chloroform
- Isopropyl alcohol
- 75% Ethanol (in DEPC-treated water)
- DEPC-treated water

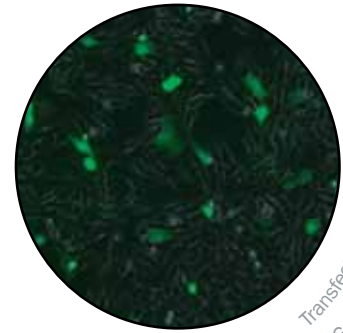
Ordering Information

Cat #	Description	Pack Size	Price
NBS-TRI	TRI-isolate RNA Reagent	100ml	£152.00

DNAfectin 2100

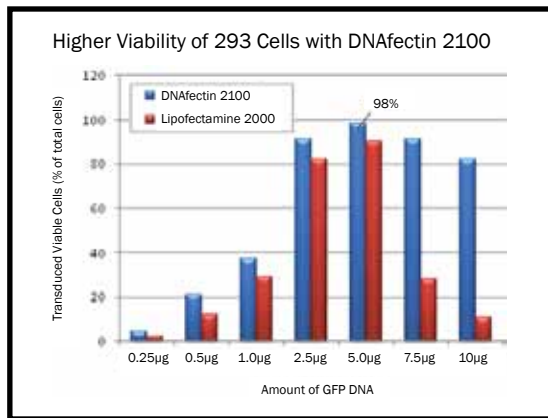
High Efficiency Transfection Reagent

- ✓ Low Cytotoxicity
- ✓ Suitable for Primary Cells



Transfection of Vero African Green Monkey Kidney Cells

DNAfectin 2100 Transfection Reagent is a unique formulation of multiple polycations and liposomes that enable highly efficient and effective DNA transfection of eukaryotic cells.



Above

Transfection efficiency and cell viability of 293 cells transfected with different amounts of GFP plasmid DNA in a 6-well cell culture plate. Results are recorded 48 hours after transfection.

Ordering Information

Cat #	Description	Pack Size	Price
G2100	DNAfectin 2100	1mg/ml	£118.00

Cell Line	Species/Tissue	Efficiency
293T	Human Embryonic Kidney	100%
Jurkat	Human T Lymphoma	25%
SHEP	Human Neuroblastoma	90%
BOSC23	Human Kidney	90%
HT1080	Human Fibrosarcoma	80%
C33A	Human Cervical Carcinoma	90%
MRC5	Human Primary Fibroblast	80%
MDK+Telo	Dog Kidney Cells+Telo	80%
B16	Murine Melanoma	80%
CB3	Mouse Erythroleukemia	25%
HuVEC	Human Umbilical Vein	20%
HepG2	Human Liver Carcinoma	40%
MMRU	Human Melanoma	75%
MMAN	Human Melanoma	80%
MDA-MB-231	Human Breast Carcinoma	85%
HeLa	Human Cervical Carcinoma	80-90%
A2780	Human Ovarian Carcinoma	70-75%
L6	Rat Myoblast	60-70%
Rabbit-telo	Telomerase-Rabbit Cells	50%
USO2 (T-USO2)	Human Osteosarcoma (tet-inducible)	80-90%

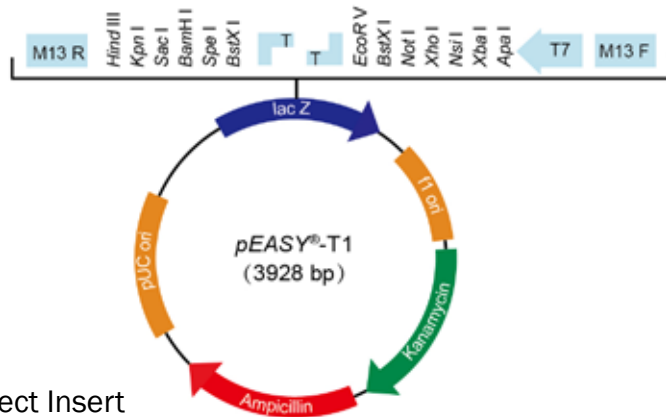
pEASY Cloning Vectors

Highly Efficient Cloning of PCR Products

Fast - Easy - Efficient

The pEASY cloning vectors provide a highly efficient, 5 minute, single-step cloning strategy for PCR products, without the need for removal of PCR buffers.

- ✓ Just Add PCR Products
- ✓ Ligation without T4 ligase in 5 minutes
- ✓ More than 95% of Clones Contain Correct Insert



pEASY Cloning and Assembly Kit

Efficient, Seamless Assembly of up to 5 DNA Fragments

- ✓ Seamless - No Extra Sequences Introduced
- ✓ Efficient - Up to 95% Positive Clones
- ✓ Fast - 15 Minutes

Supplied with Free
Chemically Competent Cell

This kit takes advantage of a proprietary assembly mix and homologous recombination to achieve directional cloning of PCR fragments that share 15-25bp overlapping sequences into any linearised vector. This kit is highly efficient for seamless assembly of up to 5 DNA fragments.

This kit is supplied with a free Trans1-T1 Phage Chemically Competent Cell.

Ordering Information

Cat #	Description	Pack Size	Price
NBS-CT101-01	pEASY - T1 Cloning Kit	20 rxns	£168.00
NBS-CT111-01	pEASY - T1 Simple Cloning Kit	20 rxns	£168.00
NBS-CT301-01	pEASY - T3 Cloning Kit	20 rxns	£168.00
NBS-CT501-01	pEASY - T5 Zero Cloning Kit	20 rxns	£168.00
NBS-CB101-01	pEASY - Blunt Cloning Kit	20 rxns	£168.00
NBS-CB111-01	pEASY - Blunt Simple Cloning Kit	20 rxns	£168.00
NBS-CB501-01	pEAST - Blunt Zero Cloning Kit	20 rxns	£168.00
NBS-CU101-01	pEASY Seamless Cloning and Assembly Kit	10 rxns	£243.00

Custom siRNA

HPLC Purified Oligos for Efficient Silencing



- ✓ Competitively Priced
- ✓ High Quality: HPLC Purity >97%
- ✓ Chemical Modified, Dye-Labelled or Large Scale Oligos

Our custom siRNA oligos are HPLC purified to >97%, this removes all of the unpaired single chains so all you need to do is dilute the oligos into universal buffer. The siRNA oligos are also chemically synthesised giving the following advantages:

1. Simple Operation
2. High Transfection Efficiency
3. Minimal Toxic Side Effect for Cells/Tissues
4. Large-scale Preparation

To order please supply either the sequences (sense & antisense) or the gene name.

free design

£97.00 / 5.0nmol

free negative control

Ordering Information

<i>Cat #</i>	<i>Description</i>	<i>Pack Size</i>	<i>Price</i>
A01002	Custom siRNA Oligo	5.0 nmol	£97.00
A01005	Custom siRNA Oligo	12.5 nmol	£162.00
A01010	Custom siRNA Oligo	25.0 nmol	£300.00
A02002	Chemically Modified siRNA Oligo	5.0 nmol	£123.00
A02005	Chemically Modified siRNA Oligo	12.5 nmol	£190.00
A02010	Chemically Modified siRNA Oligo	25.0 nmol	£319.00
A03002	FAM Labelled siRNA Oligo	5.0 nmol	£179.00
A03005	FAM Labelled siRNA Oligo	12.5 nmol	£244.00
A03010	FAM Labelled siRNA Oligo	25.0 nmol	£376.00
B01001	siRNA Negative Control	2.5nmol	£32.00
B02001	siRNA FAM Labelled Negative Control	2.5nmol	£41.00
B03001	siRNA Positive Control	2.5nmol	£32.00

miRNA Mimics & Inhibitors

HPLC Purified miRNAs for Gene Regulation & Knockout

- ✓ Control specific miRNA activity
- ✓ Tightly regulate miRNA cellular levels
- ✓ Achieve optimal delivery efficiency with minimal cytotoxicity

miRNA Mimic Synthesis

miRNA mimics are small, single stranded, chemically-synthetic and optimised nucleic acids designed to mimic endogenous mature microRNA (miRNA) molecules in cells. Our miRNA Mimics are designed to directly enter the miRNA processing pathway and, after processing, are treated identically to endogenous miRNA within the cell.

miRNA Inhibitor Synthesis

miRNA inhibitors are chemically-modified and optimised nucleic acids designed to specifically target the microRNA (miRNA) molecules in cells. Endogenous microRNAs are small, regulatory RNAs that are expressed in animals and plants that affect the translation of target mRNAs. The mature 17-24 nucleotide, single-stranded miRNAs specifically target a protein complex to regulate translation at the level of mRNA. The miRNA inhibitors are sequence-specific and chemically-modified to specifically target and knockdown individual miRNA molecules.

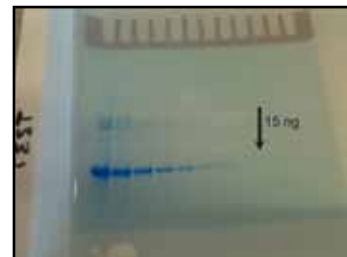
Ordering Information

<i>Cat #</i>	<i>Description</i>	<i>Pack Size</i>	<i>Price</i>
M-01-S	miRNA Single Stranded (ss) Mimics	5nmol	£97.00
M-01-D	miRNA Double Stranded (ds) Mimics	12.5nmol	£162.00
M-03-S	miRNA Mimics ss Negative Control	2.5nmol	£32.00
M-03-D	miRNA Mimics ds Negative Control	2.5nmol	£32.00
M-05	miRNA Mimics FAM Labelled ss Negative Control	2.5nmol	£41.00
M-02	miRNA Inhibitors	5nmol	£97.00
M-06	miRNA Inhibitors FAM Labelled ss Negative Control	2.5nmol	£55.00

SafeBLUE Protein Stain

Safe, Single Step Protein Stain

- ✓ The Most Sensitive Single Step Stain Available!
- ✓ No Mixing, Fixing, Washing or Destaining Required
- ✓ Compatible with Mass Spectrometry



SafeBLUE is a safe and highly sensitive single step protein stain. Simply run your protein gel, add the stain and watch your bands appear in a few minutes. There is no need to wash or destain and the background is crystal clear.

Protocol

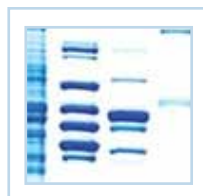
1: Run Gel



2: Add SafeBLUE*



3: Remove Gel from Stain



* Use just enough to cover gel (typically around 20ml)

** Takes 10-15mins to see 60ng, longer for low conc. proteins

Results in 10 Minutes....

Staining of low concentration proteins (60ng) occurs inside of 15 minutes with sensitivity increasing down to 10ng if left for an hour. The signal generated by SafeBLUE is linear, enabling true quantification of your sample. It is impossible to over-saturate using SafeBLUE, so if preferred you can incubate overnight without harmful effects.

SafeBLUE contains doesn't contain any harmful chemicals or acids, so is much safer than standard protein dyes - it can even be disposed of down the sink after staining!

The Safe Protein Stain

SafeBLUE is completely non-toxic and can be safely disposed of down the sink.

Ordering Information

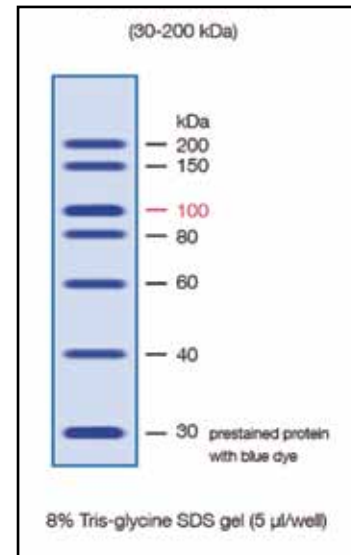
Cat #	Description	Pack Size	Price
NBS-SB1L	SafeBLUE Protein Stain	1L	£99.00
NBS-SB10L	SafeBLUE Protein Stain	10L	£720.00

Protein Ladder Plus

Ready-to-Use Protein Marker
30 kDa to 200 kDa Range

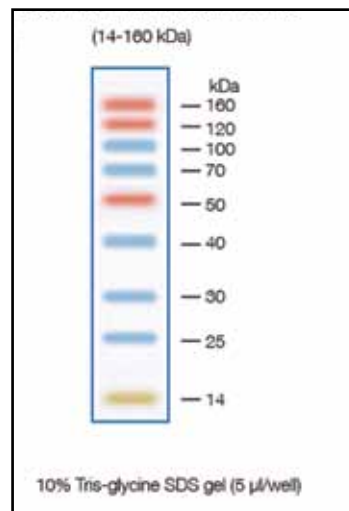
- ✓ Ready-to-use - No Heating or Reducing Agent Required
- ✓ Six unstained proteins and one prestained protein
- ✓ MW range from 30 kDa to 200 kDa

Protein Ladder Plus is composed of six unstained recombinant proteins (40 kDa, 60 kDa, 80 kDa, 100 kDa, 150 kDa, 200 kDa) and one blue prestained recombinant protein (30 kDa). The prestained protein allows easy monitoring during electrophoresis. The 100 kDa band is a double intensity band for convenient identification of protein molecular weight.



Prestained Protein Ladder Plus

Ready-to-Use Prestained Protein Marker, 14 kDa to 160 kDa Range



Protein Ladder Plus (Prestained) is composed of nine prestained proteins ranging from 14 kDa to 160 kDa. The 50 kDa, 120 kDa and 160 kDa proteins are covalently coupled to orange dye. The 14 kDa protein is covalently coupled to yellow dye. The other five proteins are covalently coupled to blue dye. After SDS-PAGE and transferral to PVDF or NC membrane, clear colour protein bands are gained and show the direction at the same time.

Ordering Information

Cat #	Description	Pack Size	Price
NBS-401	Protein Ladder Plus (30-200 kDa)	2x250 µl	£71.00
NBS-121	Prestained Protein Ladder Plus (14-160 kDa)	2x250 µl	£125.00

Acrylamide Products

Quality Acrylamides for Crystal Clear Electrophoresis Gels

- ✓ Batch tested to ensure reproducibility
- ✓ DNase, RNase & Protease free

Acrylamide, 40% Solution

Our 40% Acrylamide solution is made from ultra-pure components and is 0.45 and 0.2micron filtered.

Bis-Acrylamide, 2% Solution

Bis-Acrylamide solution is a crosslinker and is used in conjunction with the 40% Acrylamide solution to create a polyacrylamide gel of the required ratio.

Acryl/Bis Solutions

Our liquid acrylamide solutions are made to exact standards from the highest quality materials, this ensures crystal clear electrophoresis gels for reliable and reproducible results.

Solutions are manufactured using molecular biology grade pyrogen free water and filtered through 0.2 micron glass fibre and nylon filters to eliminate particulate matter.

Custom Formulations

We can offer a custom gel formulation service offering small batches of liquid acrylamide made to your specification!

Ordering Information

Cat #	Description	Pack Size	Price
NBS-2000-05	Acrylamide, 40% Solution	500ml	£38.00
NBS-2000-10	Acrylamide, 40% Solution	1L	£56.00
NBS-2500-05	Bis-Acrylamide, 2% Solution	500ml	£21.00
NBS-2500-10	Bis-Acrylamide, 2% Solution	1L	£36.00
NBS-2300-05	Acryl/Bis (19:1), 30% Solution	500ml	£40.00
NBS-2300-10	Acryl/Bis (19:1), 30% Solution	1L	£60.00
NBS-2600-05	Acryl/Bis (29:1), 30% Solution	500ml	£39.00
NBS-2600-10	Acryl/Bis (29:1), 30% Solution	1L	£59.00
NBS-2100-05	Acryl/Bis (37.5:1), 30% Solution	500ml	£42.00
NBS-2100-10	Acryl/Bis (37.5:1), 30% Solution	1L	£69.00
NBS-2400-05	Acryl/Bis (19:1), 40% Solution	500ml	£38.00
NBS-2400-10	Acryl/Bis (19:1), 40% Solution	1L	£59.00
NBS-3500-05	Acryl/Bis (29:1), 40% Solution	500ml	£42.00
NBS-3500-10	Acryl/Bis (29:1), 40% Solution	1L	£61.00
NBS-3600-05	Acryl/Bis (37.5:1), 40% Solution	500ml	£43.00
NBS-3600-10	Acryl/Bis (37.5:1), 40% Solution	1L	£64.00

Sodium Dodecyl Sulphate

SDS, 20% Solution

SDS is difficult to weigh due to its hazardous dispersal problems, therefore our SDS is supplied formulated into 20% solution ready for use. The SDS solution is 0.2 micron filtered and made from sterile MB grade water, it is supplied in 500ml quantities however other amounts can be supplied on request. SDS does not need sterilisation.

SDS-PAGE Buffers

TG (TRIS-Glycine) Buffer, 10x

TRIS-Glycine (TG) buffer is suitable for protein PAGE and western blotting procedures. Tris-Glycine and Tris-Glycine SDS are the most popular buffers used in the electrophoresis of proteins ranging from 5 to 500Kda. We also have TG buffer available as a premixed powder for added convenience.

TG-SDS (TRIS-Glycine-SDS) Buffer, 10x

Tris-glycine SDS is used as a running buffer for electrophoresis of proteins in PAGE proteomics studies. We also have TG-SDS buffer available as a premixed powder for added convenience.

Ordering Information

<i>Cat #</i>	<i>Description</i>	<i>Pack Size</i>	<i>Price</i>
NBS-4002-05	SDS, 20% Solution	500ml	£45.00
NBS-3000-01	TEMED	100ml	£44.00
NBS-6300-50	TG Buffer, 10x Solution	5L	£64.00
NBS-6300-100	TG Buffer, 10x Solution	10L	£102.00
NBS-6400-50	TG-SDS Buffer, 10x Solution	5L	£69.00
NBS-6400-100	TG-SDS Buffer, 10x Solution	10L	£106.00

ECL Western Blotting Reagent

Chemilluminescient Substrate for HRP

- ✔ Highly Sensitive Nonradioactive Substrate
- ✔ Easy Detection of Picogram Amounts of Antigen

ECL Western Blotting Substrate is a highly sensitive nonradioactive, enhanced luminol based chemilluminescient substrate for the detection of horseradish peroxidase (HRP) on immunoblots.

ECL Western Blotting Substrate enables the detection of picogram amounts of antigen and allows for easy detection of HRP using photographic or other imaging methods. Blots can be repeatedly exposed to X-ray film to obtain optimal results or stripped of the immuno-detection reagents and re-probed. The special formulation of ECL Substrate makes it the ideal substitute for Amersham ECL Substrate without the need for additional optimisation of assay conditions

Product Description...

ECL Western blotting detection reagent contains 2x100ml of A and B solutions.

Solutions A and B are mixed in a 1:1 ratio immediately prior to application. The mixture is then ready for detection of any immobilised specific antigens in chemiluminescent western blots through horseradish peroxidase (HRP) labelled antibodies. The kit is designed for a high quality and long lasting glow reaction.

The reagents in this kit have been matched to optimise the range and sensitivity of detection using various antibodies in Western blot assays.

Ordering Information

Cat #	Description	Pack Size	Price
G075	ECL Western Blotting Reagent	2 x 100ml	£81.00

Protein Labelling Kits

- ✔ High Recovery of Conjugates
- ✔ All Reagents Required for Labelling
- ✔ All Processes in Single Filtration Tube



Fluorescein Labelling Kit

The Fluorescein Labelling Kit-NH2 is mainly used for the preparation of fluorescein-labelled proteins such as IgG for immunostaining and cellular proteins for tracing. This kit can be used to produce conjugates in 1 hour and contains all of the necessary reagents for labelling, including storage buffer. Each vial of fluorescein can label up to 200 µg of IgG, conjugating about 4 to 6 fluorescein molecules per IgG molecule.

Biotin Labelling Kit

The Biotin Labelling Kit is available as both NH2 and SH reactive biotin (offering conjugation in 1 hour or 3 hours respectively). Both kits offer a high recovery of conjugates and contain all necessary reagents for the labelling. The number of biotin molecules per protein can be determined by HABA assay and excess biotin molecules can be removed using the Filtration tube (included).

Peroxidase Labelling Kit

The Peroxidase Labelling Kit is available as both NH2 and SH reactive peroxidase (offering conjugation in 1 hour or 3 hours respectively). This kit is mainly used for the preparation of peroxidase-labelled IgG for enzyme immunoassay (EIA) and for the preparation of peroxidase-labelled antigen for competitive EIA. This kit contains all of the necessary reagents for the labelling process, including Reducing agent and Storage buffer. When labelling small molecules, excess molecules can be removed by using the Filtration tubes included in this kit.

Ordering Information

Cat #	Description	Pack Size	Price
LK01-10	Fluorescein Labelling Kit-NH2	3 samples	£259.00
LK03-10	Biotin Labelling Kit-NH2	3 samples	£150.00
LK55-10	Biotin Labelling Kit-NH2	1 sample	£141.00
LK10-10	Biotin Labelling Kit-SH	3 samples	£147.00
LK57-10	Biotin Labelling Kit-SH	1 sample	£145.00
LK11-10	Peroxidase Labelling Kit-NH2	3 samples	£207.00
LK51-10	Peroxidase Labelling Kit-NH2	1 sample	£202.00
LK09-10	Peroxidase Labelling Kit-SH	3 samples	£207.00
LK53-10	Peroxidase Labelling Kit-SH	1 sample	£202.00

Cell Counting Kit-8

Low Cytotoxicity Viability & Proliferation Assay

- ✓ Low Cellular Toxicity
- ✓ Ready-to-Use Single Bottle Solution
- ✓ No Radioisotopes or Organic Solvents Required

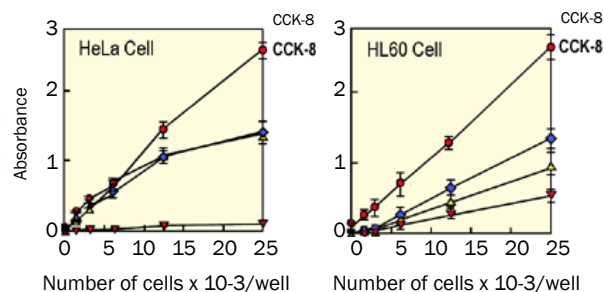


1. Add CCK-8 2. Incubate 3. Read O.D.

Cell Counting Kit-8 (CCK-8) is a Dehydrogenase based assay for cell viability and cytotoxicity. CCK-8 has been developed utilising highly water soluble tetrazolium salts, called WSTs, these produce a water-soluble formazan dye upon bioreduction in the presence of an electron carrier.

CCK-8 is added directly to the cells with no premixing of components, and is bioreduced by cellular dehydrogenases to give an orange water formazan that is directly proportional to the number of living cells.

The kit components show no cytotoxicity in cell culture media and additional experiments may be carried out using the same assay plate. CCK-8 is a flexible assay and can be adapted for 24-384 well plates. CCK-8 combines the highly stable WST-8 with 1-Methoxy PMS, giving a sensitive, nonradioactive colourimetric assay for determining the number of viable cells.



Toxicity of Assay Solutions:

Comparison Between CCK-8 and Competitor Kit



Cell Counting Kit-8



Cell viability assay from company R

Ordering Information

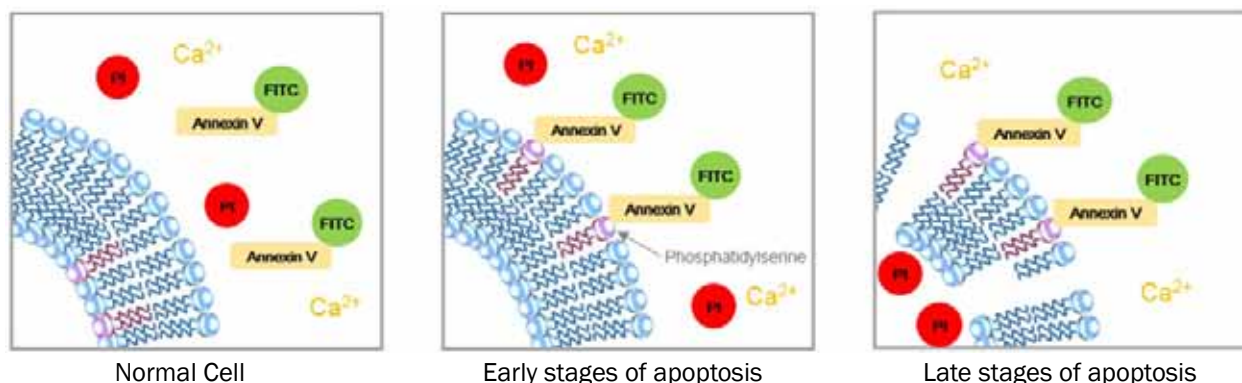
Cat #	Description	Pack Size	Price
CK04-10	Cell Counting Kit-8	500 assays	£89.00
CK04-11	Cell Counting Kit-8	1000 assays	£144.00
CK04-13	Cell Counting Kit-8	3000 assays	£307.00
CK04-20	Cell Counting Kit-8	10,000 assays	£1,067.00

Annexin V

FITC Apoptosis Detection Kit

- ✓ Apoptotic cells can be identified using flow cytometry or fluorescence microscopy
- ✓ Perform double staining simultaneously & observe stages in the cell membrane

Apoptosis plays an important role in maintaining the homeostasis and developmental processes in both plants and animals. Any abnormal cells during the cytotogenesis are eliminated by apoptosis. For instance, tumor growth from cancer cells occurred in vivo is inhibited by induction of apoptosis. However, apoptosis is not induced when the error occurs in tumor suppressor gene p53. Thus, the growth of cancer cells has been found to proceed. Apoptotic cells can be identified based on the alteration of cellular morphology as well as the alternation of biomedical changes.



Annexin V stained cells are used to indicate cell membrane changes that occur in the early stage of apoptosis. Once apoptosis is initiated, the phosphatidylserine presents in the inner cell membrane migrates through the cell membrane of the lipid bilayer. Annexin V specifically binds to phosphatidylserine in the presence of protein-dependent Ca ion. By using fluorescent-labeled Annexin V, the apoptotic cells can be identified by flow cytometry or fluorescence microscopy (fig. 1).

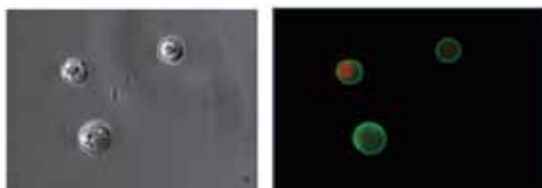


Fig. 1 Fluorescent imaging of apoptosis induced cells

Ordering Information

Cat #	Description	Pack Size	Price
AD10-10	Annexin V, FITC Apoptosis Detection Kit	50 tests	£59.00
AD10-12	Annexin V, FITC Apoptosis Detection Kit	2 x 50 tests	£96.00

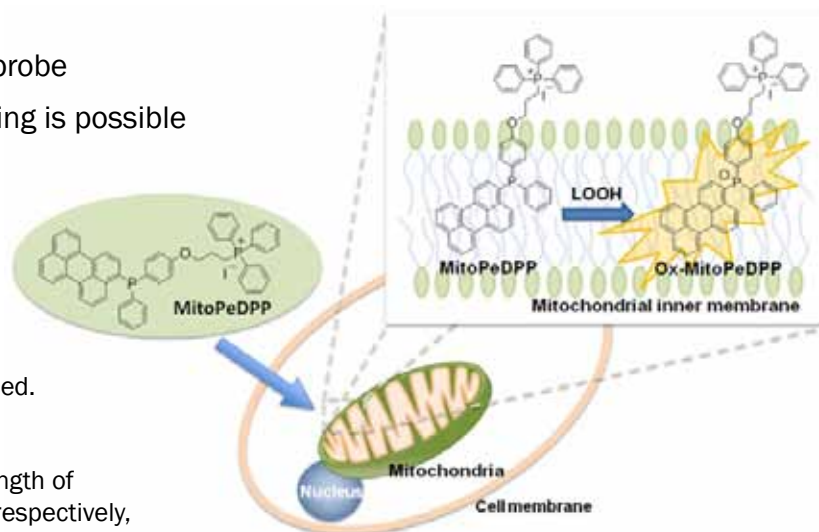
MitoPeDPP

Fluorescent Probe for Mitochondrial Research

- ✓ Cell membrane permeable probe
- ✓ Mitochondria targeted imaging is possible

MitoPeDPP is a cell-membrane-permeable probe, Perylene-based dye. It specifically localises in mitochondria due to the triphenylphosphonium moiety introduced.

As the excitation and emission wavelength of MitoPeDPP are 452 nm and 470 nm, respectively, the probe can be applied for lipophilic peroxide imaging in living cells.



Lipophilic Peroxides Detection in Mitochondria (cell line used: HepG2 cell)



- A: MitoPeDPP stained Mitochondria with t-BHP treatment
 B: MitoRed stained Mitochondria
 C: Merged Image (A/B)

Ordering Information

Cat #	Description	Pack Size	Price
M466-10	MitoPeDPP	1 set (3 x 5ug)	£192.00

Cell Immortalization Reagents

We are proud to be ABM's exclusive UK/Ireland distributor for cell immortalization products.

Primary cells have a finite life span of less than 10-50 passages in vitro depending on cell type. Immortalizing your cell line will eliminate the frequent need to re-establish fresh cultures from specimen and will provide a consistent cellular material, capable of extended proliferation and possess similar or identical genotype and phenotype as the parental tissue, throughout the duration of your research experiment.

Immortalization Strategies for Mammalian Cells

Several methods exist for immortalizing mammalian cells in culture. With years of experience, ABM has developed the most comprehensive cell immortalization products comprising of ready-to-use retroviral, lentiviral and adenoviral vectors.

Replicative senescence is an irreversible growth arrest triggered by a DNA damage signal from critically short telomeres, thus restoration of telomerase activity in primary cells can extend cell proliferation and achieve immortalization. Many studies have shown that co-expression of hTERT with other immortalizing agents (namely CDK4 and Bmi1, both of which silences tumor repressor p16) provides a more authentic normal cell model with well-defined genetic background.

Overriding the normal cell cycle control points is another way of bypassing cellular senescence, and the most commonly used and the best understood of this class of oncogenes is Simian Virus 40 large T antigen (SV40). SV40 Large T antigen binds to a number of proteins, but the most important are p53 and Rb which, when functioning normally, are negative regulators of cell division. Similarly, using siRNA to inactive p53 and/or Rb can also initiate unlimited cellular life span. Other oncogenes include c-Myc, Ras and HPV 16 E6/E7 and their introduction, likewise, can efficiently immortalize primary cells.

While most cell types can be established from the use of hTERT and other oncogene expression, B and T lymphocytes have proven refractory to immortalization to these immortalizing agents, and have only been shown to be immortalized through use of specific methods such as EBV.

Product Groups Available

- ✓ Gene Immortalization (Myc, p53, Rb, Ras, CDK4, Bmi1) Reagents
- ✓ HPV E6-E7 Cell Immortalization Reagents
- ✓ SV40 T antigen Cell Immortalization Reagents
- ✓ EBV Cell Immortalization Reagents
- ✓ hTERT Cell Immortalization Reagents

Contact us for details...

Primary Cells

Primary cells are taken directly from living tissue (e.g. biopsy material) and cultured in vitro. As opposed to continuous cell lines (e.g. tumor), primary cells are known for their virtue of retaining most of the characteristics of the original tissue from which they are derived in the first place.

Primary Cells

Primary Adipose Cells
 Primary Airway Cells
 Primary Blood Cells
 Primary Blood Vessel Cells
 Primary Bone and Cartilage Cells
 Primary Bone Marrow Cells
 Primary Brain Cells
 Primary Breast Cells
 Primary Colon Cells
 Primary Digestive System Cells
 Primary Eye Cells
 Primary Hair Follicle Cells
 Primary Heart Cells
 Primary Liver Cells
 Primary Lung Cells
 Primary Mesentery Tissue Cells
 Primary Oral Cells
 Primary Pancreas Cells
 Primary Placenta Cells
 Primary Renal System Cells
 Primary Reproductive System Cells
 Primary Skeletal Muscle Cells
 Primary Skin Cells
 Primary Umbilical Cord Cells

Immortalized Primary Cells

Immortalized Adipose Cells
 Immortalized Airway Cells
 Immortalized Blood Cells
 Immortalized Blood Vessel Cells
 Immortalized Bone and Cartilage Cells
 Immortalized Bone Marrow Cells
 Immortalized Brain Cells
 Immortalized Breast Cells
 Immortalized Colon Cells
 Immortalized Eye Cells
 Immortalized Hair Follicle Cells
 Immortalized Heart Cells
 Immortalized Liver Cells
 Immortalized Lung Cells
 Immortalized Mesentery Cells
 Immortalized Oral Cells
 Immortalized Ovarian Cells
 Immortalized Pancreas Cells
 Immortalized Pharynx Cells
 Immortalized Placenta Cells
 Immortalized Renal System Cells
 Immortalized Reproductive System Cells
 Immortalized Skeletal Muscle Cells
 Immortalized Skin Cells
 Immortalized Umbilical Cord Cells

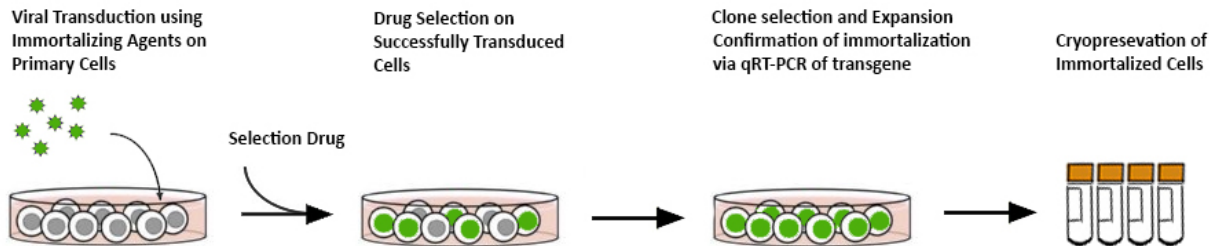
Immortalized Primary Cells

Immortalized primary cells are derivatives of primary cells that owing to mutation events end up evading normal cellular senescence and acquiring the ability of continuous cell-division. Immortalized cells are highly useful for research in cell biology as they are easier to culture and maintain than primary cells.

ABM has the world's largest collection of immortalized cell lines which can provide you with an integrated platform for meeting the needs for virtually any relevant research project. We also provide customers with custom cell immortalization services (see page 33).

Cell Immortalization Service

With years of experiences with cell line cell immortalization, scientists at ABM have been able to successfully immortalize essentially any human and mouse cell in last 10 years using different immortalizing agents or genes. If you have a primary cell culture that needs to be immortalized, ABM's custom services is the quick and reliable service for your project. It saves you time and money over trying different genes yourself. ABM's custom service package already includes all different genes and you will not pay anything unless your cells are successfully immortalized. So it is risk-free and you pay only when your cell line is immortalized.



Due to the vast array of different cells types and custom products/services available, it is not possible to outline the range in this catalogue, the full range can be viewed on ABM's own website, www.abmgood.com

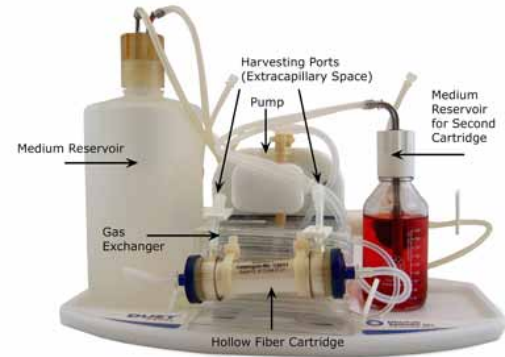
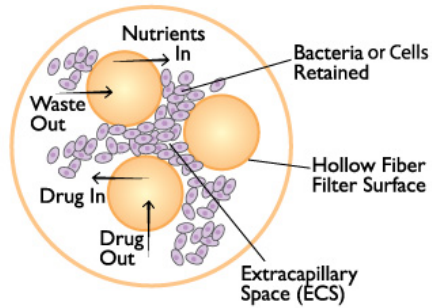
ABM products/sevices are availabe exclusively through us in the UK and Ireland. For further information and pricing please contact us directly, by email or phone.

Email: info@nbsbio.co.uk

Phone: [01480 433875](tel:01480433875)

Hollow Fiber Cell Culture

Duet Pump for Hollow Fiber Cell Culture



The FiberCell Systems Duet Pump provides flexible flow rate support for all of the FiberCell hollow fiber bioreactor cartridges. Continuous flow is required to provide for nutrition support and constant oxygenation of the culture modules. The Duet utilises a unique positive pressure displacement pumping action on the pump tubing of the flow path. Squeezing of the tubing in conjunction with the two one-way check valves produces a frictionless pumping action. Peristaltic pumps rub on the tubing causing pieces of the tubing to break off and move into circulation where they can cause blockage of the fibers. This frictionless mechanism is the reason that FiberCell modules have supported continuous culture of cells up to 2 years of continuous culture.

Constant flow rate and oxygenation is the key to support of hollow fiber cell culture modules. The FiberCell Duet Pump system can generate from 1 mL to 140 mL per minute of flow rate depending upon the cartridge used. Silicone tubing is gas permeable and can be used to provide for gas exchange while maintaining the system in a closed, biosafe manner. The loop of silicone tubing that is part of the cartridge flow path stand provides the gas exchange for the system. The larger cartridges (C2003 and C2018) along with the C5011 contain twice the amount of tubing as the medium sized cartridges and also have a larger pump tubing to provide for increased flow rate increasing the oxygenation capacity of these systems.

Simple in design and execution, the FiberCell Duet Pump is designed to fit into a standard CO₂ incubator, which provides temperature, and gas control. There is a thin cord designed to fit through the incubator door that provides low voltage power to the pump and the brushless DC motor ensures that ozone is not generated inside the incubator. Cartridges are easily removed from the Duet while the motor is running. Work with the cartridge in the hood and then replace the cartridge into the Duet when you are finished.

The FiberCell Duet Pump comes with a full 2-year warranty.

Ordering Information

Cat #	Description	Price
P3202	FiberCell Duet Pump	£1971.00
A1006	38mm Reservoir Caps for plastic bottles	£176.00
A1005	33mm Reservoir Caps for glass bottles	£176.00
A1007	5-port 38mm for invitrotox	£249.00
A1008	45mm Reservoir Caps (steel) for bottles	£249.00

Hollow Fiber Cartridges

Cartridge Selection Guide

A cartridge should be selected based on the intended application. FiberCell offer three types of fibers: polysulfone, cellulosic, and PS+ fibers. FiberCell also offer three different molecular weight cut-offs (MWCO): 5 kd, 20 kd, and .1 micron.

The hydrophilic polysulfone fiber is specifically selected for good cell culture performance. Both the 5 kd MWCO and 20 kd MWCO fibers have ten times the gross filtration rate of the equivalent cellulosic fiber for rapid nutrient and waste exchange. This is seen as better cell growth and higher fidelity of protein production not seen in cellulosic fibers. Any cell type that will attach to plastic or grow in suspension culture should grow well in the polysulfone cartridge.

Ordering Information

Cat #	Description	Surface Area	Fiber Type	Packing Density	ECS Vol	Max. Cell#	Price
C2025	Small Polysulfone Plus cartridge .1µm	75 cm ²	activated PS	30%	2.5 mL	108	£219.00
C2008	Medium Polysulfone cartridge 5kd MWCO	3000 cm ²	low flux PS	50%	20 mL	109	£375.00
C2011	Medium Polysulfone cartridge 20kd MWCO	3000 cm ²	high flux PS	50%	20 mL	109	£375.00
C3008	Medium Cellulosic 5kd MWCO	2000 cm ²	Cellulosic	38%	12 mL	109	£375.00
C2018P	Large PS 20kd MWCO cartridge, no flow path	1.2 m ²	high flux PS	50%	70 mL	5 x 1010	£348.00
C2003	Large Polysulfone cartridge 5kd MWCO	1.2 m ²	low flux PS	50%	70 mL	5 x 1010	£514.00
C2018	Large Polysulfone cartridge 20kd MWCO	1.2 m ²	high flux PS	50%	70 mL	5 x 1010	£514.00
C2003P	Large PS 5kd MWCO cartridge, no flow path	1.2 m ²	low flux PS	50%	70 mL	5 x 1010	£348.00
C5011	HI Output Mab cartridge	3000 cm ²	high flux PS	50%	20 mL	2 x 109	£411.00
C4005	2.5 m ² Polysulfone cartridge, 5kd MWCO	2.5 m ²	low flux PS	50%	150 mL	1011	£440.00
C4020	2.5 m ² Polysulfone cartridge, 20kd MWCO	2.5 m ²	high flux PS	50%	150 mL	1011	£440.00

As a general rule the cartridge used will depend upon the size of the secreted product you wish to collect and the amount you wish to collect. FiberCell cartridges are powerful cell culture tools and their small size can be misleading. The medium sized C2011 with a surface area of 3,000 cm² and a volume of only 20 mL has been shown to out-produce a 10 liter bag type bioreactor by a significant degree. The larger cartridges should only be used when 500 mg or more of a recombinant protein is desired.

For monoclonal antibody production the 20 kd MWCO fiber should be used to allow TGF beta to diffuse out while retaining the antibody within the small volume of the ECS. The scale-up option here is the C5011 which is optimized for hybridoma culture. Please see the monoclonal antibody section for more information.

The PS+ fiber has a unique chemistry that allows protein matrices, antibodies and cytokines to be bound to the surface of the fiber. This cartridge should be used for primary cell types where you wish to control the surface matrix that the cells interact with and also for the growth of endothelial cells on the inside of the fiber. The fiber must be coated with some matrix so this matrix should be taken into account when selecting this fiber.

CDM-HD Serum Replacement

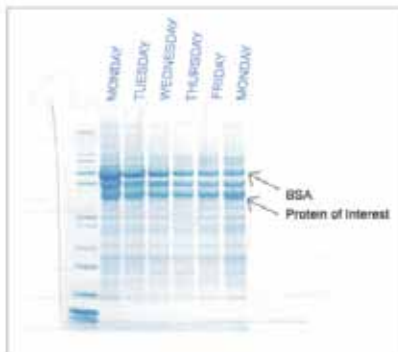
Chemically Defined & Protein Free

- ✓ Lot-to-Lot Consistency
- ✓ Regulatory Compliance Simplified
- ✓ Long Shelf Life, Simple Storage Conditions

CDM-HD Serum Replacement is a chemically defined, protein free serum replacement that permits any basal medium (eg. DMEM or RPMI) to be used without serum.

CDM-HD provides lot-to-lot consistency and is an economical replacement for serum. It is available as a dry powder to make up one litre and is used at a concentration of 10%. CDM-HD has been optimised for hollow fiber systems but is also suitable for use in T-Flask based cell cultures.

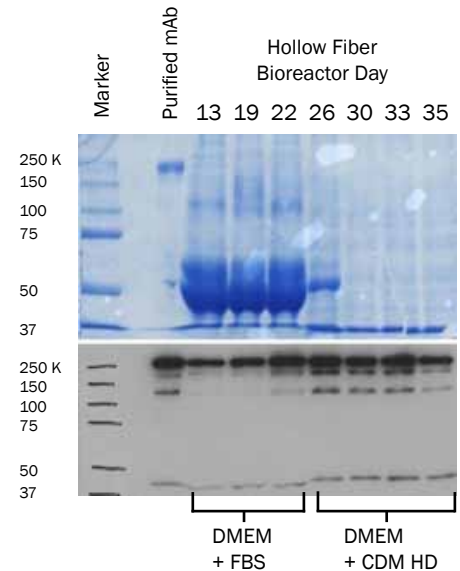
Demonstration of Adaptation to Serum-free Medium



SDS-Page gel of successive harvests from the ECS of a recombinant protein secreted by a 293 cell line. Initial medium is DMEM with 10% FBS (Monday). Medium is changed from DMEM-FBS to Hyclone serum free medium for 293 cells. Note the diminution of serum proteins, especially BSA in the harvest from the ECS while the protein of interest remains constant or increases as the adaptation continues. Protein of interest is higher in concentration on Mondays as it has accumulated over the weekend to a higher level.

Ordering Information

Cat #	Description	Pack Size	Price
CDM-HD	CDM-HD Serum Replacement	Powder for 1L	£174.00



CDM-HD is part of the complete hollow fiber cell culture range we supply. This range includes the duet pump (see page 34), cartridges and accessories.

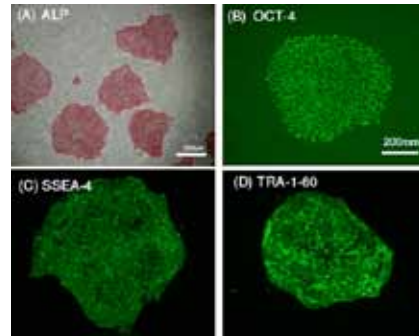
Designed for...

- ✓ Monoclonal Antibodies
- ✓ Recombinant Proteins
- ✓ In Vitro Toxicity
- ✓ Lymphocyte
- ✓ Endothelial
- ✓ Virus

StemCell Keep

Cryopreservation Solution for Stem Cells

- ✓ High Efficiency
- ✓ Protein and DMSO Free
- ✓ Long Shelf Life - Two Years at 4°C



StemCell Keep is a ready-to-use vitrification solution for human ES/iPS cell cryopreservation. This low toxicity and easy to handle solution has been developed without any protein or DMSO to achieve maximum efficiency.

High Efficiency

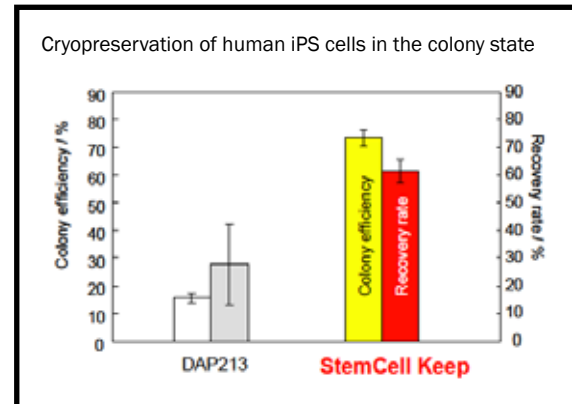
StemCell Keep combines high cytoprotection with vitrification technology to cryopreserve ES/iPS cell colonies - cell pluripotency is maintained after thawing.

Protein and DMSO Free

Animal-derived, protein free and DMSO free formulation with no risk of the adverse affect of DMSO on differentiation usually associated with vitrification.

Long Shelf Life

StemCell Keep has a shelf life of 2 years when stored at 4°C, after use the remaining solution can be kept for this period without losing functional quality.



Above - attached colony and recovery rates after thawing. *One day after seeding.* After vitrification with DAP213 only 15% of colonies were attached (compared to the non-freezing control), compared to 80% of the colonies when vitrified with StemCell-Keep.

At day 4. Cells had grown and formed large colonies, these were counted to evaluate recovery rates - 28% for cells preserved by vitrification using DAP213, compared to 62% using StemCell-Keep.

Ordering Information

Cat #	Description	Pack Size	Price
VPL-A1	StemCell Keep	20ml (100 vials)	£224.00

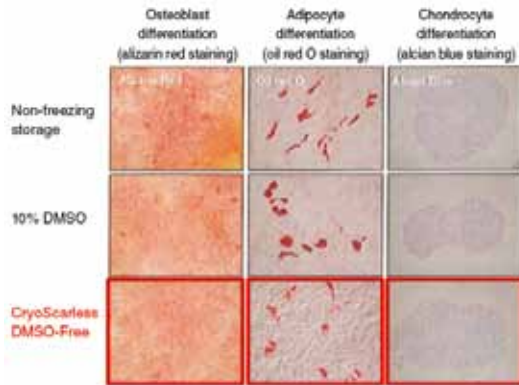
CryoScarless

Serum/DMSO Free Medium for long-term Storage

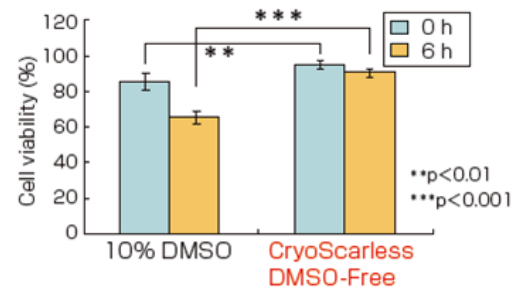
- ✓ Serum-Free and DMSO-Free Formulation
- ✓ Consistent and High Cell Viability after Thawing
- ✓ Free of Bacteria, Fungi and Mycoplasma Contamination



CryoScarless is a serum-free and DMSO-free cryopreservation medium for preservation of various cells at -80°C or in liquid nitrogen. This ready-to-use medium offers consistent and high cell viability after thawing ($> 90\%$ for most of the cell lines) whilst maintaining stem cell pluripotency. CryoScarless is free of bacteria, fungi and mycoplasma contamination and comes with a long shelf life (stable for 2 years at 4°C after the date of manufacture).



Above - Differentiation of rat mesenchymal stem cells after thawing. The results showed that cell pluripotency was maintained after thawing in rat mesenchymal stem cells cryopreserved in CryoScarless DMSO-Free.



Above - Cell viability of rat mesenchymal stem cells after thawing. Cell viability after cryopreservation with CryoScarless DMSO-Free was significantly higher than cells cryopreserved in 10% DMSO. 0 h : immediately after thawing, 6 h : after cell adhesion

Ordering Information

Cat #	Description	Pack Size	Price
CPL-A1	CryoScarless	100ml	£293.00

ThelioKeep

Preservation Medium for Dermal Tissue

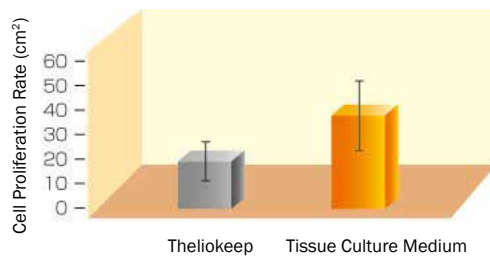


- ✔ Tissues Kept in Theliokeep can be used for Various Applications
- ✔ Free of Bacteria, Fungi and Mycoplasma Contamination

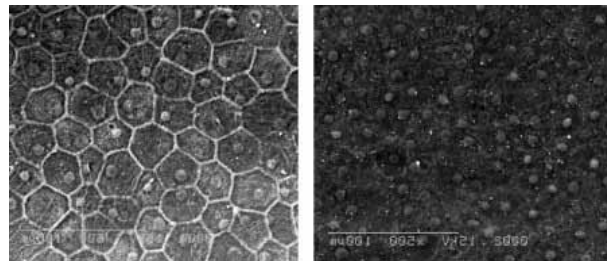
ThelioKeep is a serum-free and dimethyl sulfoxide (DMSO)-free medium for preserving tissue at 4°C for 1 - 2 weeks. Preservation with Theliokeep Maintains the morphology and proliferative ability of epithelium and endothelium tissues, it can also be used in neural tissue and in the case of peripheral nerve the electrophysiological function will be maintained.

Comparison Data

Comparison of morphology and proliferative ability using corneal endothelium tissue



Comparison of cell membrane form in tissue preserved for 2 weeks at 4°C



Theliokeep

Tissue Culture Medium

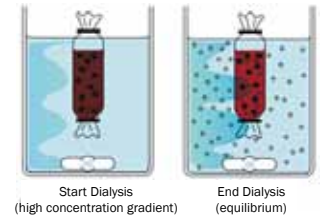
Ordering Information

Cat #	Description	Pack Size	Price
TPO-A1	Theliokeep	100ml	£182.00

Biotech Dialysis Tubing

Biotech Grade CE and RC Tubing, Discs & Sheets

Biotech membranes are specifically engineered for more critical separation constraints in which an ultrapure membrane with a precise MWCO is required. Since these synthetic membranes are manufactured using a process without metal salts, no pre-treatment or cleaning is required.



Biotech membranes are available in two membrane types:

- Cellulose Ester (CE)
- Regenerated Cellulose (RC)



Cellulose Ester (CE)

Wide range of selectivity and purity

pH Range: 2-9

Temperature Limit: 37°C

Organic Resistance: Fair

Regenerated Cellulose (RC)

Combined selectivity, purity, resistance

pH Range: 2-12

Temperature Limit: 60°C

Organic Resistance: Good

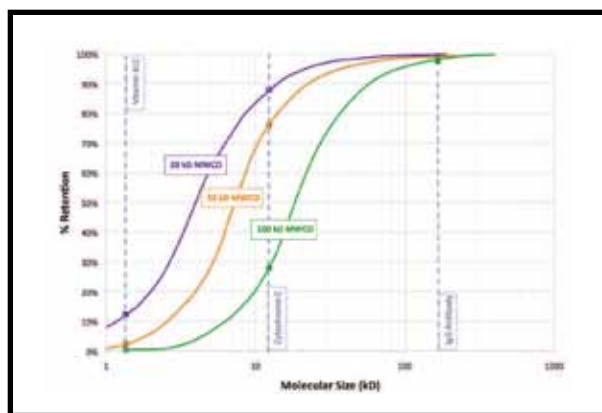
Ordering Information

Cat #	Description	Pack Size	Price
131048	SPECTRA/POR BIOTECH CE 100 - 500 MWCO 10MM	10M/PKG	£350.00
131054	SPECTRA/POR BIOTECH CE 100 - 500 MWCO 16MM	10M/PKG	£400.00
131057	SPECTRA/POR BIOTECH CE 100 - 500 MWCO 24MM	10M/PKG	£458.00
131060	SPECTRA/POR BIOTECH CE 100 - 500 MWCO 31MM	10M/PKG	£481.00
131084	SPECTRA/POR BIOTECH CE 500 - 1,000 MWCO 10MM	10M/PKG	£350.00
131090	SPECTRA/POR BIOTECH CE 500 - 1,000 MWCO 16MM	10M/PKG	£400.00
131093	SPECTRA/POR BIOTECH CE 500 - 1,000 MWCO 24MM	10M/PKG	£458.00
131096	SPECTRA/POR BIOTECH CE 500 - 1,000 MWCO 31MM	10M/PKG	£481.00
131192	SPECTRA/POR BIOTECH CE 3,500 - 5,000 MWCO 10MM	10M/PKG	£350.00
131198	SPECTRA/POR BIOTECH CE 3,500 - 5,000 MWCO 16MM	10M/PKG	£400.00
131201	SPECTRA/POR BIOTECH CE 3,500 - 5,000 MWCO 24MM	10M/PKG	£458.00
131204	SPECTRA/POR BIOTECH CE 3,500 - 5,000 MWCO 31MM	10M/PKG	£481.00
131264	SPECTRA/POR BIOTECH CE 8,000 - 10,000 MWCO 10MM	10M/PKG	£350.00
131270	SPECTRA/POR BIOTECH CE 8,000 - 10,000 MWCO 16MM	10M/PKG	£400.00
131273	SPECTRA/POR BIOTECH CE 8,000 - 10,000 MWCO 24MM	10M/PKG	£458.00
131276	SPECTRA/POR BIOTECH CE 8,000 - 10,000 MWCO 31MM	10M/PKG	£481.00
131336	SPECTRA/POR BIOTECH CE 20,000 MWCO 10MM	10M/PKG	£350.00
131342	SPECTRA/POR BIOTECH CE 20,000 MWCO 16MM	10M/PKG	£400.00
131345	SPECTRA/POR BIOTECH CE 20,000 MWCO 24MM	10M/PKG	£458.00
131348	SPECTRA/POR BIOTECH CE 20,000 MWCO 31MM	10M/PKG	£481.00
131372	SPECTRA/POR BIOTECH CE 50,000 MWCO 10MM	10M/PKG	£350.00
131378	SPECTRA/POR BIOTECH CE 50,000 MWCO 16MM	10M/PKG	£400.00
131381	SPECTRA/POR BIOTECH CE 50,000 MWCO 24MM	10M/PKG	£458.00
131384	SPECTRA/POR BIOTECH CE 50,000 MWCO 31MM	10M/PKG	£481.00
131408	SPECTRA/POR BIOTECH CE 100,000 MWCO 10MM	10M/PKG	£350.00
131414	SPECTRA/POR BIOTECH CE 100,000 MWCO 16MM	10M/PKG	£400.00
131417	SPECTRA/POR BIOTECH CE 100,000 MWCO 24MM	10M/PKG	£458.00
131420	SPECTRA/POR BIOTECH CE 100,000 MWCO 31MM	10M/PKG	£481.00
131450	SPECTRA/POR BIOTECH CE 300,000 MWCO 16MM	10M/PKG	£400.00
131456	SPECTRA/POR BIOTECH CE 300,000 MWCO 31MM	10M/PKG	£481.00
131486	SPECTRA/POR BIOTECH CE 1,000,000 MWCO 16MM	10M/PKG	£400.00
131492	SPECTRA/POR BIOTECH CE 1,000,000 MWCO 31MM	10M/PKG	£481.00
133192	SPECTRA/POR BIOTECH RC MWCO 3,500 - 5,000 D 10MM	5 M/PKG	£209.00
133198	SPECTRA/POR BIOTECH RC MWCO 3,500 - 5,000 D 16MM	5 M/PKG	£209.00
133264	SPECTRA/POR BIOTECH RC MWCO 8,000 - 10,000 D 10MM	5 M/PKG	£209.00
133270	SPECTRA/POR BIOTECH RC MWCO 8,000 - 10,000 D 16MM	5 M/PKG	£209.00
133336	SPECTRA/POR BIOTECH RC MWCO 20,000 D 10MM	5 M/PKG	£209.00
133342	SPECTRA/POR BIOTECH RC MWCO 20,000 D 16MM	5 M/PKG	£209.00
133410	SPECTRA/POR BIOTECH RC MWCO 50,000 D 10MM	5 M/PKG	£209.00
133416	SPECTRA/POR BIOTECH RC MWCO 50,000 D 16MM	5 M/PKG	£209.00

Float-A-Lyser G2

Ready-to-Use Dialysis Device

- ✓ 95 - 98% Sample Recovery
- ✓ Volume Specific Dilution Control
- ✓ Superior Handling & Leak Prevention



▲ MWCO Selection Guide

Please use the chart above to choose the correct molecular weight cut off.

The proprietary Biotech Grade CE is a low protein-binding synthetic membrane available in 6 precise MWCO's with no heavy metal and sulfide contaminants. The cylindrical tubing geometry prevents sample dilution (associated with cassette-type devices) and provides open access for total volume retrieval by pipette. Only the Float-A-Lyser G2 assures a 95-98% sample recovery while maintaining 99% sample purity and <1% sample dilution.

Introducing the Float-A-Lyser G2, the next generation in Ready-to-Use laboratory dialysis devices featuring proprietary Ultra-pure Biotech Cellulose Ester (CE) Membranes.

The leak-proof screw-on cap with sealing o-ring provides easy access with included pipette for loading, in-process testing and sample retrieval, without the risk of needle punctures. The included floatation ring improves sample buoyancy and vertical orientation during dialysis. The sleek design allows multiple samples to be dialysed in the same reservoir.

Ordering Information

MWCO	Colour Code	Maximum Sample Volume			Pack Size
		1ml	5ml	10ml	
0.1 - 0.5 kD	Green	G235025	G235049	G235061	12/pkg
3.5 - 5 kD	Black	G235029	G235053	G235065	
8 - 10 kD	Yellow	G235031	G235055	G235067	
20 kD	Red	G235033	G235057	G235069	
50 kD	Violet	G235034	G235058	G235070	
100 kD	Blue	G235035	G235059	G235071	
300 kD	Amber	G235036	G235060	G235072	
1000 kD	Pink	G235037	G235062	G235073	
Price		£113.00	£124.00	£127.00	

Genomics

Proteomics

Cell Biology

Cell Culture

Separation

Micro Float-A-Lyzer

Ready-to-Use Micro Volume Dialysis Device

- ✓ Ready-to-Use & Complete
- ✓ Easy Syringe Loading (no needle)
- ✓ Ultrapure Biotech CE (no cleaning)
- ✓ Maximizes SA & Minimizes Hold-up Volume



Spectrum introduces the new Micro Float-A-Lyzer to expand the popular line of ready-to-use dialysis devices for the easy and efficient dialysis of very small sample volumes (100-500 μ l). Providing ultimate convenience, this preassembled device incorporates Spectrum's ultrapure Biotech Grade Cellulose Ester (CE) tubular membrane into an easy-to-use design making laboratory microdialysis easier than ever. Micro Float-A-Lyzer is available in 2 volumes sizes: 100 - 200 μ l & 400 - 500 μ l; and 7 concise MWCO's ranging from 100 - 100,000 Daltons.

Designed for Ease-of-Use and Convenience

The Micro Float-A-Lyzer is designed to stand upright on bench-tops during experimental preparation as well as float and self-orient during dialysis. The leak-proof Luer-Lok cap provides easy access with the included syringe for easy loading and sample retrieval. The units can also interlock for the simultaneous dialysis of multiple samples.

Sample Recovery & Purity

Spectrum's proprietary Biotech Grade CE is a low protein-binding, synthetic membrane available in 7 concise MWCO's and does not require pre-treatment or cleaning since there is no heavy metal and sulfide contaminants. The preformed tubular geometry provides maximum membrane surface area for dialysis efficiency and collapses flat permitting retrieval of every drop. Only Micro Float-A-Lyzer assures a 95-98% sample recovery while maintaining 98% sample purity.

Ordering Information

MWCO	Sample Volume		Pack Size
	100-200 μ l	400-500 μ l	
100-500	F235049	F235061	12/pkg
500-1.000	F235051	F235063	
3.500-5.000	F235053	F235065	
8.000-10.000	F235055	F235067	
20.000	F235057	F235069	
50.000	F235058	F235070	
100.000	F235059	F235071	
<i>Price</i>	£113.00	£113.00	

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Genomics

Proteomics

Cell Biology

Cell Culture

Separation