

Product survey: Blotting equipment

“Low-tech” at its Best

A lot of molecular biologists still use classic blotting techniques such as Southern, northern and western blotting in their daily lab routine. Despite fancy microarray-chips, stylish real-time PCR cyclers and all the other high tech equipment found in most of today’s “Omics”-Labs.

One of the reasons why these “low-tech” methods still have their place in many labs is down to their ease of use. Take a northern blot, for example. In its simplest form it takes three things to transfer RNA from an agarose gel to the blotting membrane: a tray for the blotting buffer, a few sheets of filter paper and a nylon or nitrocellulose membrane. That’s all, no further gimmicks or gadgetry. You don’t even need electricity, since the RNA molecules are pulled by capillary force from the gel to the membrane. That’s low-tech at its best, simple but effective.

Little has changed since the nineteen-seventies, when Ed Southern and James Alwine presented the first Southern and northern blots, respectively; however, a few things have been improved. Whereas Southern and Alwine placed the paper towel above gel and membrane to transfer the DNA/RNA by upward capillary blotting, in modern downward capillary blotting devices the transfer stack is arranged upside down. By applying this simple trick, capillary and gravity forces acting on the buffer follow the same direction, reducing the transfer time from overnight for upward blotting to just one hour for downward blotting. Though some still prefer to assemble homemade capillary blot devices, there are also commercial kits available containing stack and buffer tray together with a pre-cut membrane, a wick and a blotter stack.

Simple plastic box

Vacuum blotting is even faster than downward capillary blotting. Usually, it takes between 15 minutes and one hour to transfer DNA or RNA from the gel to the membrane using a vacuum blotter. Though a little more sophisticated than capillary blotters, vacuum blotters are rather simple devices. They are basically made from two halves of a plastic box. The lower one serves as a tank, collecting the buffer that flows through gel and membrane, whilst the upper half, or cover plate, contains the buffer. The sandwich comprising agarose gel, membrane and filter papers is placed in the

middle of the two halves on a porous plate. Cover plate and tank are put together and tightened by two clips before a vacuum is applied. A low-end apparatus still has a few more bits and pieces than a capillary blotter. The only “high-tech” to be found inside the blotter is the vacuum gauge hidden in the manometer, necessary to adjust the strength of the vacuum. Simply drawing a vacuum with a water pump is not a clever idea, since it may be too high and the agarose gel could collapse into pieces like a jigsaw puzzle.

Even though proteins can also be transferred by capillary blotting, most protein biochemists don’t apply this method to proteins because the protein transfer is awfully slow and often incomplete. Researchers working with proteins usually rely on electroblotting techniques that, depending on the amount of transfer buffer necessary, are subdivided into three categories: dry, semi-dry and wet, the second being the most popular and widely used method.

Dry or semi-dry?

Semi-dry blotting is fast and easy: you simply have to stack the sandwich comprising pre-soaked blotting papers, membrane and PAGE-gel between two plate electrodes, connect one to the negative and the other to the positive pole of a power supply and turn over the electric switch. The proteins move along the electric field between the two plate electrodes and usually reach the membrane after 10 to 60 minutes. The exact transfer time depends on protein size, gel type and thickness of the gel. With some semi-dry blotters it is possible to blot multiple gels either side-by-side or stacked on top of each other.

Though semi-dry blotting requires only a little volume of buffer and methanol, it is still a wet blotting technique. If you’re fed up with preparing blot buffers and handling methanol, you may have a shot at a dry blotting system. In dry blotters, transfer buff-



Dry or semi-dry? That’s the question, not only if it comes to western blotting.

er and methanol are replaced by a gelmatrix that delivers the ions necessary for the electrotransfer of proteins. Due to the high density of ions in the gelmatrix, the protein transfer is pretty fast, taking only seven minutes or even less. That’s the good news. The bad news is that the matrix has to be replaced after each blot. One has to spend approximately € 10 to € 15 per matrix, depending on gel size and type of membrane (nitrocellulose or PVDF).

Tank blotters for stubborn proteins

Wet or tank blotting requires a lot of buffer and transfer time may exceed two hours or even take overnight. In some cases, however, tank blotters are still the better choice. Take for example researchers working with native or temperature-sensitive proteins. They usually prefer a gentle and slow protein transfer in a properly cooled tank blotter. The same holds true for the transfer of large or “stubborn” proteins that don’t like being transferred onto a membrane. And there’s another point in favour of the tank blotter: you may blot, up to five gels simultaneously.

HARALD ZÄHRINGER

Blotting Equipment

Company	Model	Blotting method and application(s)	Gel size(s), number of gels per blot	Miscellaneous, Specialities, Generally	Price [EUR]
Applichem Darmstadt, Germany www.applichem.com Contact: Wolfram H. Marx Phone: +49(0)6151/9357-45 w.marx@applichem.com	PVDF-Star Transfer Membrane 0.45 µm	Tank blotting, semi-dry blotting, protein and amino acid analysis, Western blot	Roll: 3m x 30 cm	<ul style="list-style-type: none"> ■ Hydrophobic ■ Superior strength (140-250 µm thickness) ■ High protein binding capacity: 125 µg/cm² ■ Pore size: 0.45 µm 	310,15
	Pure Nitrocel. Transfer Membr., sizes 0.22/0.45 µm	Protein/DNA/RNA transfer, dot/slot blot, Western blot	Roll: 3 m x 30 cm, 0.45 µm or 3 m x 30 cm, 0.22 µm	<ul style="list-style-type: none"> ■ High sensitivity ■ Protein binding capacity: 100 µg/cm² ■ Easily blocked ■ 2 pore sizes available 	262,40 (0.45 µm) 316,05 (0.22 µm)
	Reprobe Nitrocellulose supported Transfer Membrane	DNA/RNA/protein transfer, colony/plaque lifts, for multiple reprobings	Roll: 3 m x 30 cm	<ul style="list-style-type: none"> ■ Nucleic acid binding capacity: 100 µg/cm² ■ Internally supported for extra strength ■ Pore size: 0.22 µm 	296,90
	Pure Nylon Neutral Transfer Membrane, 0.22 µm / 0.45 µm	DNA/RNA transfer, micro/macro arrays, dot/slot blot, library screening	Roll: 3 m x 30 cm, 0.45 µm / 0.22 µm	<ul style="list-style-type: none"> ■ High strength (65-125 µm thickness) ■ Nucleic acid binding capacity: 350 µg/cm² ■ 2 pore sizes available 	333,85 (0.22 µm) 307,75 (0.45 µm)
	Reprobe Nylon Positively Charged Transfer Membrane	DNA/ RNA transfer, micro/macro arrays, dot/slot blot; for multiple reprobings	Roll: 3 m x 30 cm	<ul style="list-style-type: none"> ■ Highest nucleic acid binding capacity: 450 µg/cm² ■ High strength (65-125 µm thickness) ■ Pore size: 0.45 µm 	307,75
Biometra Goettingen, Germany www.biometra.com Contact: Juergen Otte Phone: +49(0)551-50686-0 info@biometra.com	Fastblot B33 / B34	Semi-dry blotting of proteins up to 150 kD	16 x 20 cm, 4 x 4 Minigels or 4 x 2 Maxigels	<ul style="list-style-type: none"> ■ Plasticised carbon electrodes ■ Little transfer buffer required ■ Cooling option ■ Quick transfer 	From 715,-
	Fastblot B43 / B44	Semi-dry blotting of proteins up to 150 kD	16 x 20 cm, 4 x 4 Minigels or 4 x 2 Maxigels	<ul style="list-style-type: none"> ■ Platinum/titanium electrodes ■ Little transfer buffer required ■ Cooling option ■ Quick transfer 	From 820,-
	Tankblot	Tank blotting of small and large proteins	10 x 10 cm, 4 Minigels	<ul style="list-style-type: none"> ■ Best suited for large proteins and native enzymes ■ Highly effective cooling jacket 	925,-
	Mini-V8.10 Blot Module	Tank blotting of small and large proteins	9.5 x 8.5 cm, 2 Minigels	<ul style="list-style-type: none"> ■ Best suited for large proteins and native enzymes ■ Modular system for combination with Mini-V8.10 Gel Electrophoresis Apparatus 	355,-
	Blot Transfer Apparatus 11.14/20.25	Capillary blotting of nucleic acids from agarose gels	11 x 14 cm / 20 x 25 cm, 1 gel (11 x 14/20 x 25)	<ul style="list-style-type: none"> ■ Easy set up ■ Overnight transfer 	From 140,-
	Dot Blot 96 / System, Hybri.Slot 24, The Convertible	Horizontal vacuum blotting technique for immobilisation, concentration and binding of proteins and nucleic acids onto membranes	96 "dots" or 24 / 48 "slots"	<ul style="list-style-type: none"> ■ No cross-contamination ■ Multichannel pipette compatible ■ Dot Blot 96: Innovative sealing system, high capacity ■ The Convertible: Alternative dot or slot blott. applicat. 	From 650,-
	Standard Power Pack P25 / P25T	Low voltage power supply f. blotting/electrophoresis applications	-	<ul style="list-style-type: none"> ■ 400 V ■ 1,000 mA ■ 200 W 	From 635,-
Bio-Rad Laboratories München, Germany www.bio-rad.com Contact: TechSupportLSG.CE@bio-rad.com Phone: +49(0)89 31 884-177	Mini Trans-Blot Cell	Wet	Blot area: 2 x 10x7.5 cm max 2 mini Gels (9x7 cm)	<ul style="list-style-type: none"> ■ Blotting module compatible with Mini-Protein Tetra Cell tank ■ Blotting time 60 min 	From 583,-
	Criterion Blotter	Wet	Bl. area: 2 x 15x9.4 cm max 2 midi Gels (13x9 cm) 4 mini Gels (9x7 cm)	<ul style="list-style-type: none"> ■ Electrode either wire or plate electrode for higher field transfer ■ Blotting time 30/60 min (plate/wire electrode) 	From 660,-
	Trans-Blot Cell	Wet	Bl. area: 3 x 20x16 cm max 3 large Gels (20x16 cm) 6 midi Gels (13x9 cm) 12 mini Gels (9x7 cm)	<ul style="list-style-type: none"> ■ Electrode either wire or plate electrode for higher field transfer ■ Flexible distance between electrodes (4, 8 cm) ■ Blotting time 30/60 min (plate/wire electrode) 	From 902,-
	Trans-Blot SD Semi-Dry transfer Cell	Semi dry	Blot area: 24x16 cm max 1 (2 with staking) large Gels (20x18.5 cm), 3 midi Gels (13x9 cm) side by side, 4 mini Gels (9x7 cm) side by side	<ul style="list-style-type: none"> ■ Platinum-coated titanium anode and stainless-steel cathode plate electrodes provide consistent and reliable transfers, durability, and long life ■ Blotting time 15-60 min 	1240,-
	Trans Blot Plus Cell	Wet	Blot area: 3 x 28x26.5 cm max, 3 Extra large Gels (25.6 x 23 cm), 3 large Gels (20x16 cm), 12 midi Gels (13x9 cm), 27 mini Gels (9x7 cm)	<ul style="list-style-type: none"> ■ Flexible distance between electrodes (4, 7, 10 cm) ■ Blotting time 15-60 min 	2850,-
biostep Jahnsdorf, Germany www.biostep.de Contact: Silvana Böhme Phone: +49(0)3721-3905-24 s.boehme@biostep.de	TV100-EBK TV400-EBK	Wet Blotting System	10 x 10 cm, 20 x 20 cm, 4 gels	<ul style="list-style-type: none"> ■ Cost-effective, safe and easy to use system ■ No loss of samples due to asymmetric blot cassettes ■ Flat bottom – allows to be placed directly onto a magnetic stirrer ■ Safety lid with integral power lids ■ Max. cooling due to internal cooling coil 	From 355,-
	V10-SDB, V20-SDB Blotting paper Blotting membrans	Semi-dry electroblotting	10 x 10 cm, 1 gel, 20 x 20 cm, 4 gels, 10 x 10 cm, 1 gel, 20 x 20 cm	<ul style="list-style-type: none"> ■ Gels are stackable for higher throughput blotting ■ Colour-coded, corrosion-free plate electrode ■ Large active transfer area ■ Fast transfer time 	From 588,-

Blotting Equipment

Company	Model	Blotting method and application(s)	Gel size(s), number of gels per blot	Miscellaneous, Specialities, Generally	Price [EUR]
biostep Contact see page 56	Nitrocellulose Blotting Membrans	For Western, Southern and Northern blotting	10 x 10 cm, 20 x 20 cm	-	From 108,-
	PVDF Blot. Membr.	For Western blotting	10 x 10 cm, 20 x 20 cm	-	From 152,-
	Filter paper	For Western blotting	7.6 x 10.1 cm, 20 x 20 cm	-	From 34,-
Biozym Scientific Hess. Oldendorf, Germany www.biozym.com Contact: Detlev Frermann Phone: +49(0)5152 9020 support@biozym.com	EasyPhor Kapillar Blotter	Capillary Blotting	Blotting Area 28 x 26 cm; Number of gels depending on gel size	<ul style="list-style-type: none"> Efficient transfer of high and low M.Wt. fragments Fast and easy setup 	244,-
	EasyPhor Electroblott. System, 10 x 10; 20 x 20 (Maxi)	Wet Electroblotting	Blotting Area: 10 x 10 cm, 20 x 20 cm, 5 gels at a time, 3 blots at a time	<ul style="list-style-type: none"> Modular system Ideal for western blotting Rigid cassettes for maximum transfer 	432,- to 621,-
	EasyPhor Electro-Wet Blot Mini: 10 x 10, Maxi: 20 x 20	Wet Electroblotting	Blotting Area: 10 x 10cm, 20 x 20 cm, 5 gels at a time	<ul style="list-style-type: none"> Up to 5 gel blot cassettes Especially designed for wet electroblotting 	486,- to 594,-
	Semi Dry Blotter Mini, Maxi, Giga, Mega	Semi dry blotting	Blotting area: 10 x 10, 20 x 20, 20 x 50, 33 x 45 cm Number of gels depending on gel size	<ul style="list-style-type: none"> Easy stable system Homogenous electrical field 	419,- to 1.756,-
Carl Roth Karlsruhe, Germany www.carlroth.com Contact: Stefanie Seipp Phone: +49(0)721/5606-1038 s.seipp@carlroth.de	Tank Blotting-Systems	Tank Blotting	Mini: 10 x 10 cm (max. 4 gels) Maxi: 20 x 20 cm (max. 4 gels)	<ul style="list-style-type: none"> Even and gentle transfer For denaturing and native blots Coolable buffer tank For 2 blot decks per side Compatible with our vertical electrophoresis systems 	849,- (Mini) 1229,95 (Maxi) (Please ask for a quotation)
	Tank Blotting-Moduls	Tank Blotting	Mini: 10 x 10 cm (max. 4 gels) Maxi: 20 x 20 cm (max. 4 gels)	<ul style="list-style-type: none"> Even and gentle transfer For 2 blot decks per side For denaturing and native blots Compat. w. tanks of our vertical electrophor. systems Accessories can be bought separately 	395,- (Mini) 733,- (Maxi)
	Semi Dry-Blotter	Semi Dry-Blotting	Mini: 10 x 10 cm (max. 3 gels); Maxi: 20 x 20 cm (max. 3 gels)	<ul style="list-style-type: none"> Even and gentle transfer Long-lasting, corrosion-free electrodes For denaturing and native blots Minimal heat formation 3 blot decks applicable 	636,- (Mini) 1278,- (Maxi)
	Roti-PVDF Membrane	Applicable for all Western Blotting systems	Rolls: Applicable for all sizes.	<ul style="list-style-type: none"> Pore size 0.45 µm Best signal-to-noise ratio Applicable for long-term exposition Very robust Compatible with all detection and blocking systems 	209,50 (Roll: 375 x 26.5 cm)
	Roti-NC Nitrocellulose Membrane	Applicable for all Western Blotting systems	Rolls (300 x 30, 300 x 20 cm) and sheets (10.2 x 13.3, 20 x 20 cm) for 10 x 10 and 20 x 20 cm gels Discs: Ø 8.2 cm	<ul style="list-style-type: none"> Pore size 0.2 µm High binding capacity (>200 µg/cm²) Low background Easy to block Compatible with all detection and blocking systems 	Roll: 215,- to 195,- Sheets (10 pcs.) 89,- to 140,- Discs (50 pcs.): 120,-
	Rotilabo-Blotting paper	Applicable for all Western Blotting systems	Sheets of different sizes (10 x 13 cm, 15 x 15 cm, 20 x 20 cm, 46 x 57 cm, 58 x 60 cm) incl. sheets for 10 x 10 cm and 20 x 20 cm gels	<ul style="list-style-type: none"> Pure white linters paper made of high-grade cotton Without chemical additives Absorptive paper with smooth surface Available in 4 thicknesses and several cuts For larger amounts, please ask for a quotation 	29,90 to 179,- (0.18 mm/100 pc) 19,80 to 162,- (0.36 mm/100 pc) 16,70 to 115,- (1.0 mm/25 pcs) 149,- (1.5 mm/25)
GE Healthcare Europe Munich, Germany www.gelifesciences.com Contact: Andrea Löhndorf, andrea.loehndorf@ge.com	Amersham ECL Semi-dry Blotters TE 77 PWR TE 70 PWR TE 77TE70	Semi-dry Blotter, Electrotransfer of proteins from polyacrylamide gels	TE70: for gels up to 14 x 16 cm/TE77: for gels up to 21 x 26 cm, Transfer two polyacrylamide gels in a stack	<ul style="list-style-type: none"> Only minimal buffer amounts needed One run takes less than 1 h Long lasting perforated platinum-titanium & stainless steel electrodes give uniform, contamination free transfers Stopping feature prevents overheating Available with and without built-in power supplies 	On request
	TE22 Mini Tank Transfer Unit TE 62 Transfer Unit	Tank Transfer Unit; Electro transfer for Western, Southern and Northern Blots	TE 22: 4 mini-gels up to 9 x 10 cm i. about 1 l of buff. TE 62: 4 standard gels up to 15 x 21 cm in about 5 l buffer or 16 mini-gels	<ul style="list-style-type: none"> One run takes less than 1 h Control of transfer temperature through built-in alumina heat exchanger Fast set up with the hinged color-coded cassettes 	On request
	miniVE Blot Module	Semi-wet Blotter, Electrotransfer for Western, Southern and Northern Blots	Transfer four gels up to 10 x 10.5 cm with only 300 ml buffer	<ul style="list-style-type: none"> One run takes only 45 min Simple Modular design allows convenient electrophoresis and blotting in one unit 	On request
	EPS 301 EPS 601 EPS 1001 EPS 2A200EPS	Depending on the model: suitable for blotting as well as vertical and flat bed gel electrophoresis, output range between 0-1000 V, 0-2000 mA, and 1-200 W	-	<ul style="list-style-type: none"> Timed or continuous runs, with end-of-run alarm if desired Automatic parameter limit crossover prevents overheating and protects experiment and equipment Automatic recovery after power failure 	On request

Blotting Equipment

Company	Model	Blotting method and application(s)	Gel size(s), number of gels per blot	Miscellaneous, Specialities, Generally	Price [EUR]
GE Healthcare Europe Contact see page 57	Processor Plus	One system for automated blot processing and gel staining. Prepares blots for high-sensitivity ECL and chromogenic detection	Blot-Processing: 4 mini- (up to 9 x 9.5 cm) or 2 standard- (up to 16 x 16 cm) sized blots at one time. Staining: 1-6 mini-gels or 1-2 standard gels	<ul style="list-style-type: none"> ■ Programmable control of protocol, solution, volume and processing time ■ A serial printer can be connected to the Processor Plus for report generation 	On request
	Membrane: Amersham Hybond ECL	Unsupported 100% pure nitrocellulose membrane validated for use with all ECL Western blotting systems and for all protein blotting applications.	Different sizes available	<ul style="list-style-type: none"> ■ Special packaging features include interleaves on both sides of the membrane and an air-tight resealable aluminum bag with label space to mark the "opened on" date ■ Available in two pore sizes 0.2 µm and 0.45 µm 	On request (depending on package size)
	Membrane: Amersham Hybond-P	Hydrophobic polyvinylidene difluoride (PVDF) membrane. Optimized for use in protein transfer and/or Western blotting applications	Different sizes available	<ul style="list-style-type: none"> ■ Typical binding capacity of 125 mg/cm² ■ High mechanical stability is ideal for stripping and reprobing ■ Pore size 0.45 µm 	On request (depending on package size)
	Membrane: Amersham Hybond-LFP	Low-fluorescent PVDF membrane optimized for fluorescent detection in Western blotting applications.	Different sizes available	<ul style="list-style-type: none"> ■ Low background fluorescence resulting in higher sensitivity ■ Typical protein binding capacity is > 400 mg/cm² ■ Pore size 0.2 µm 	On request (depending on package size)
Invitrogen Paisley, Inchinnan, UK www.invitrogen.com Contact: Kurt.Gielen@Invitrogen.com	iBlot Dry Blotting system	Dry-Blotting (without any Buffer)	Blotting size is 14 cm x 8.5 cm, 1 Midi or E-PAGE-gels, 2 Mini-gels	<ul style="list-style-type: none"> ■ Transfer in 7 min, 3 min for handling ■ System includes power supply ■ High yield and reproducibility 	On request
	Novex Semi-Dry Blotter	Semi-Dry Blotting	Blotting size is 20 cm x 20 cm, 2 Midi or E-PAGE gels, 4 Mini-gels,	<ul style="list-style-type: none"> ■ 60 min total blotting time ■ Suitable for large gels ■ Needs less than 200 ml buffer 	On request
	XCell II Blot Modul	Tank Blotting	Blotting size is 9 x 9 cm, 1-2 Mini-gels	<ul style="list-style-type: none"> ■ 60-120 min total blotting time ■ Flexible tank blotting system ■ < 200 ml buffer ■ Without clamps or hinged gel holders 	On request
G. Kisker Steinfurt, Germany www.kisker-biotech.com Contact: Miriam Köster Phone: +49(0)2551-864310 contact@kisker-biotech.com	Mini Blotter E-SDB-10	Semi-Dry-Blotting of Western-, Southern & Northern-Blots	10 x 10 cm, 1 gel per blot	<ul style="list-style-type: none"> ■ Rapid transfer times ■ Uniform heat dispersion ■ Long life electrodes ■ Screw down lid ■ Compatible with gel thicknesses from 0,25 to 10 mm 	499,-
	Maxi Blotter E-SDB-20	Semi-Dry-Blotting of Western-, Southern & Northern-Blots	10 x 10 cm, 4 gels per blot 20 x 20 cm, 1 gel per blot	<ul style="list-style-type: none"> ■ Rapid transfer times ■ Uniform heat dispersion ■ Long life electrodes ■ Screw down lid ■ Compatible with gel thicknesses from 0,25 to 10 mm 	798,-
	Tank Electroblotter E-EBM-10	Wet electroblotting of proteins - Western Blotting	10 x 10 cm, 5 gels per blot	<ul style="list-style-type: none"> ■ Up to five gel blot cassettes ■ Hinged cassettes ■ Compatible with gel thicknesses from 0,25 to 3 mm ■ Compatible with magnetic stirrer 	565,95
	Tank Electroblotter E-EBM-20	Wet electroblotting of proteins - Western Blotting	10 x 10 cm, 20 gels per blot 20 x 20 cm, 5 gels per blot	<ul style="list-style-type: none"> ■ Up to five gel blot cassettes ■ Hinged cassettes ■ Compatible with gel thicknesses from 0,25 to 3 mm ■ Compatible with magnetic stirrer 	691,95
	Nitrocellulose membrane MNC-0.2/MNC-0.4	Transfer of proteins and nucleic acids	Packsize 33 x 300 cm	<ul style="list-style-type: none"> ■ Pore size 0.45 µm for standard applications- Pore size 0.2 µm for low weight proteins (< 20 kDa) and nucleic acids ■ 100% pure nitrocellulose ■ High binding capacity 80-100 µg/cm² 	169,-
LI-COR Biosciences Bad Homburg, Germany www.licor.com Contact: Dr. Carina Grauvogel, Phone: +49(0)6172/1717740 carina.grauvogel@licor.com	MPX Blotting System	Ideal for multiple-target detection and antibody screening on a single Western Blot without stripping. Quantitative analysis is immediately possible using LI-COR's Odyssey Infrared Imaging System and reagents optimized for use on the Odyssey.	Accommodates membranes of up to 7 x 8.5 cm	<ul style="list-style-type: none"> ■ Increases throughput, maximizes efficiency and reduces relative overall costs ■ Up to 48 targets or antibodies can be screened simultaneously by using 24 independent incubation channels ■ Incubation volume is reduced to 160 µl of diluted antibody solution per independent channel ■ Convenient use due to compatibility with standard multichannel pipettes ■ Can also be utilized with standard Western Blot detection methods 	Please contact your local distributor
	Blot Washer	Western Blotting, automated blot washes and secondary antibody incubation	Processes up to 4 different incubations/ washings simultaneously	<ul style="list-style-type: none"> ■ Increases your throughput, improves reproducibility, and saves time ■ Compatible with LI-COR's Odyssey Infrared Imaging System and with most other fluorescent and chemiluminescent Western Blotting detection methods ■ Compatible with most shakers 	Please contact your local distributor
	Odyssey Nitrocellulose Membrane	Protein transfers for all blotting procedures	10 sheets (7 x 8.5 cm), roll (30 cm x 3 m)	<ul style="list-style-type: none"> ■ Pore size 0,2 µm ■ Strong and durable ■ High protein binding capacity, low protein burn-through ■ Low background 	Please contact your local distributor
	Western Blot Incubation Boxes	Western Blot incubation and washing steps	Four convenient sizes available	<ul style="list-style-type: none"> ■ Western Blot Incubation Boxes are closable, light-tight boxes ideal for antibody incubation and washing ■ Available in different sizes 	Please contact your local distributor

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Company	Model	Blotting method and application(s)	Gel size(s), number of gels per blot	Miscellaneous, Specialities, Generally	Price [EUR]
Millipore Schwalbach/ Ts.Germany www.millipore.com Contact: Florian Meier Phone: +49(0)6196/494130 Florian_Meier@millipore.com	SNAP i.d. Blotting membranes, blocking and stripping solutions as well as antibodies	Immunodetection within 30 min using blots from either semi-dry or tankblot systems	Minigels (7.5 x 8.8 cm) 2 in parallel	■ Vacuumdriven immunodetection in 30 min	765,-
Peqlab Biotechnologie Erlangen, Germany www.peqlab.de Contact: Kerstin Hardung Phone: +49(0)9131-6107059 hardung@peqlab.de	PerfectBlue Electroblotter Sedec S	Semi-Dry Blotting	For 1 gel up to 10 x 10 cm	■ High grade electrode plates made of platinum-coated titanium (anode) and stainless steel (cathode) ■ 3 year warranty ■ Transfer time: 30 - 120 min ■ Low buffer requirement ■ Easy and rapid handling	625,-
	PerfectBlue Electroblotter Sedec M	Semi-Dry Blotting	For 1 gel up to 20 x 20 cm	See above	850,-
	PerfectBlue Electroblotter Web S	Wet Blotting	For up to 4 gels up to 8.5 x 9.5 cm	■ High grade electrode plates made of platinum-coated titanium (anode) and stainless steel (cathode) ■ 3 year warranty ■ Easy and rapid handling ■ Integrated water circulation cooling system ■ Transfer time: 120 - 360 min	810,-
	PerfectBlue Electroblotter Web M	Wet Blotting	For up to 2 gels up to 18 x 20 cm	See above	1.050,-
	Blotting-Membranes	Nitrocellulose, Nylon, PVDF	0.30 x 3.0 m Roll	■ High binding capacities ■ Pore diameter 0.45 µm ■ Outstanding chemical stability ■ PVDF also available with pore diameter 0.20 µm	From 185,-
PerkinElmer LAS Rodgau, Germany www.perkinelmer.de Contact: Barbara Siefker Phone: +49(0)6106-610558 barbara.siefker@perkinelmer.com	Protran Nitrocellulose Membrane	Western Blotting (radioactive, chemiluminescent and chromogenic) Southern- and Northern Blotting (only capillary transfer)	All Gel sizes; pore size 0.2 and 0.45 µm; sheets or rolls	■ Cheap ■ Low background ■ High retention of small proteins	From 61,-
	Poly Screen PVDF-Membrane	Western Blotting	All Gel sizes; sheets or rolls	■ Very sensitive ■ Reprobable ■ Archivable ■ High binding capacity ■ Nonflammable	From 177,-
	GeneSreen Nylon Membrane (neutral)	Southern and Northern Blotting (chemiluminesc. & chromogenic)	All Gel sizes; sheets, rolls and discs	■ Very high binding capacity ■ Rugged and flexible ■ Nonflammable ■ UV crosslinking in only 2 min	From 138,-
	GeneSreen Plus Nylon Membrane (positive)	Southern and Northern Blotting (radioactive)	All Gel sizes; sheets or rolls	■ Best choice for radiometric detection ■ High affinity for RNA and DNA ■ No need to fix ■ Rugged and flexible ■ Nonflammable	From 142,-
	GeneSreen Plus NRNylon Membrane (neutral)	Southern and Northern Blotting (chemiluminescent and chromogenic)	All Gel sizes; rolls	■ Best choice for chemiluminescent and chromogenic with low background ■ Very high binding capacity ■ UV crosslinking in only 2 min	278,-
Roche Diagnostics Find your local contact names and phone number at www.roche-applied-science.com	PVDF Western Blotting Membranes	Ideal for western and dot blots, blotting from 2 D gels, protein sequencing, cell blotting	1 roll (0.3 x 3 m)	■ Strong sample retention and low background binding generates excellent signal-to-noise ratios ■ Ideal for colorimetric & chemiluminescent detection ■ Full range of blotting products	Please contact your local distributor
	Nylon Membranes, positively charged	Ideal for Southern, northern, and dot blots with nonradioactively and radioactively labeled DNA, RNA, or oligonucleotide probes	Different pack sizes: 10 sheets (20 x 30 cm), 20 sheets (10 x 15 cm), 1 roll (0.3 x 3 m)	■ Specially developed to give the strongest signals and lowest background in color or chemiluminescent detection of DIG-labeled hybrids ■ Also suitable for radioactive probes ■ Positively charged membrane ■ Full range of blotting products	Please contact your local distributor
	Nylon Membranes for Colony and Plaque Hybridization	Circular membranes used in plaque and colony lifts	Different sizes: 50 discs (each 82 mm diameter) 50 discs (each 132 mm diameter)	■ Specifically function-tested for screening phage or cosmid libraries, using the DIG system ■ Also suitable for hybridization with biotinylated or radioactive probes ■ Full range of blotting products	Please contact your local distributor
	Lumi-Film Chemiluminescent Detection Film	Ideal for detecting signals from alkaline phosphatase chemiluminescent substrates in membrane hybridization techniques	100 films (7.1 x 9.4 inches, 18 x 24 cm) or (8 x 10 inches, 20.3 x 25.4 cm)	■ For chemiluminescent and radioactive detection of blotted signals ■ Full range of blotting products	Please contact your local distributor
VWR International www.vwr.com Contact: Matthias Dornheim Phone: +49(0)2173/3942422 Matthias.dornheim@de.vwr.com	VWR Collection Semi-Dry-Blotter	Semi-dry	20 x 20 cm	■ Electrodes of stainless steel/titanium ■ Robust acryl housing	1260,-
	BTV100	Western	10 x 10 cm	■ Double side for 2 blots ■ Buffer recirculation	589,-
	BTV400	Western	20 x 20 cm	See above	695,-
	Blotting modul for CTV electrophoreses	Western	10 x 10 and 20 x 20 cm	■ Double side for 2 blots ■ Only one chamber for electrophoreses and blotting needed	501,- 589,-