Ettan Sample Preparation Kits and Reagents

Right from the start

Amersham Biosciences

18-1176-06 AA

Preparation is everything

The first step to generating reliable, accurate results is getting the first step right. Sample preparation is crucial to obtaining good data; key proteins lost during initial sample preparation can never be restored.

Amersham Biosciences has introduced a range of new kits and reagents that bring reliability, ease-of-use, reproducibility, and consistency to sample preparation for 2-D electrophoresis, mass spectrometry, and Western blotting.

Ettan™ Sample Preparation Kits and Reagents effectively remove contaminating compounds such as nucleic acids, carbohydrates, and lipids, not to mention abundant proteins that can mask the signals generated by important trace proteins.

The kits and reagents are fully compatible with other products in the Ettan proteomics product portfolio, such as the Ettan IPGphor™ range of isoelectric focussing systems, Ettan DIGE system for 2-D DIGE, and Ettan MALDI-ToF Pro for protein identification. In essence, Ettan sample preparation products remove the element of chance in protein isolation allowing researchers to focus on the generation and analysis of reliable and consistent data.

Sample fractionation
page 4

Allows for the quantitative comparison of changes in protein profiles of cells, tissues, or whole organisms through the isolation of groups of proteins, or fractions from the total proteome.

Sample clean-up and quantitation
page 8

Provides a fast, effective and, convenient solution for selective and quantitative protein precipitation. Concentrates proteins from samples that are too dilute for effective analysis.

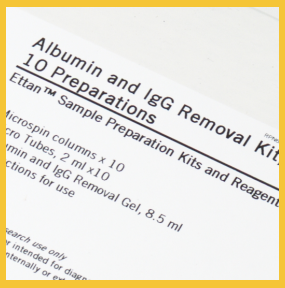
Cell lysis and homogenization
page 13

Supports the effective disruption of cells or tissues, and homogenization. Helps maximize sample recovery, retain structural integrity, avoid introduction of new contaminants, and concentrate the sample to bring it into the optimal detection range.

Quality reagents for quality results
page 16

Eliminates artifacts and improves results thoughout the various stages of the sample preparation workflow.

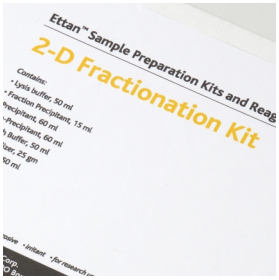
Sample fractionation



Proteome studies comparing total cell protein profiles often require highly reproducible separation of cell- or tissue-protein extracts. Currently, two-dimensional gel electrophoresis (2-D electrophoresis) is the only proven method that simultaneously separates complex protein mixtures and permits the quantitative comparison of changes in protein profiles of cells, tissues, or whole organisms.

Fractionation makes it possible to isolate groups of proteins, or fractions from the total proteome. This allows for improved resolution when an individual fraction is analyzed, provides less crowded 2-D maps, simplifies analysis and interpretation, and increases the chances of discovering novel proteins of diagnostic or therapeutic interest.

See more well-resolved 2-D spots with 2-D Fractionation Kit



The 2-D Fractionation Kit simplifies analysis of complex protein mixtures by reducing the amount and number of protein species loaded into the gel matrix. The kit allows separation of highly abundant proteins from low-abundance proteins of interest bringing them into the dynamic range of detection. The 2-D Fractionation Kit exploits the property of protein molecules to precipitate and/or solubilize in an aqueous medium and is optimized to allow the separation of protein samples into a set of six fractions. Scaling up of the process to generate additional fractions or novel proteins is achieved by following the instructions in the protocol. The fractionation method employed provides high sample recovery with no loss of protein.

Features

- Proven technology resolves complex protein samples into six easily manageable fractions, which provides distinct, reproducible 2-D maps
- High sample recovery with no loss of protein
- Reveals more spots
- Enhances the visibility and detection of low-abundance proteins
- Can be scaled-up for larger samples
- Compatible with other downstream separation techniques, such as 2-D electrophoresis

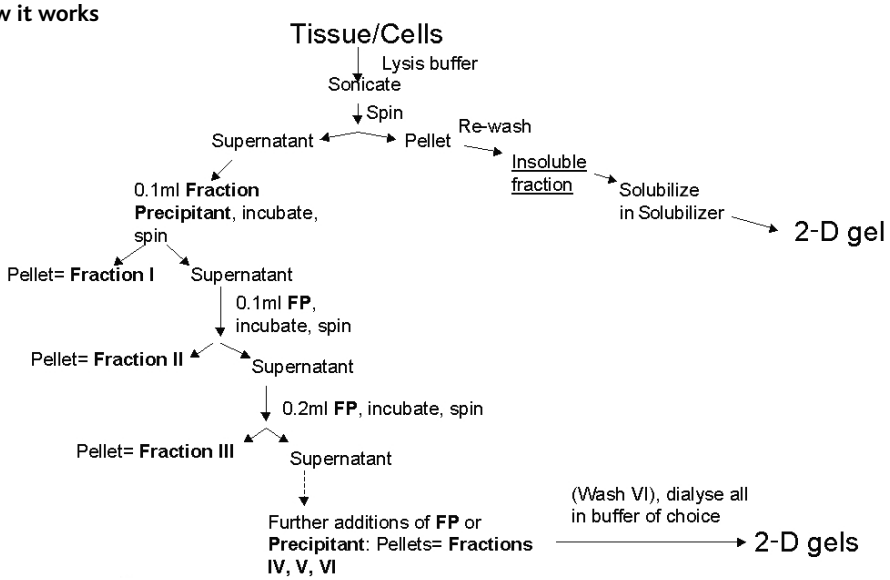
Contents

Each 2-D Fractionation Kit contains Lysis buffer 50 ml, Fraction precipitant 15 ml, Precipitant 2 × 30 ml, Coprecipitant 2 × 30 ml

Wash buffer 50 ml, Solubilizer and Diluent to make up 50 ml of Solubilizing buffer

This kit is suitable for 10 separate samples, with ~0.5 ml protein extract in each set

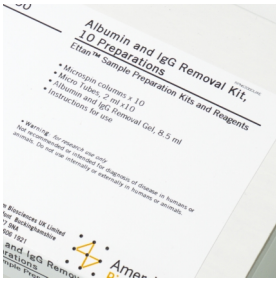
How it works



Schematic of the fractionation workflow using 2-D Fractionation Kit.

Ordering Information	
2-D Fractionation Kit for 10 samples	80-6501-04

Use Albumin and IgG Removal Kit to improve 2-D electrophoresis of human serum



Proteins in serum and other biological fluids are difficult to resolve by 2-D electrophoresis, largely due to the abundance of serum albumin and IgG. In human serum, albumin constitutes 50–70% of the total protein and IgG constitutes 10–25%. The presence of these proteins obscures other proteins in the gel and limits the amounts of proteins in the serum that can be resolved by 2-D electrophoresis. In addition, these proteins have wide pI and molecular weight ranges that further reduce resolution and mask other low-abundance proteins.

Albumin and IgG Removal Kit improves resolution of low-abundance proteins and increases the number of spots in the treated sample. The kit includes an affinity gel that selectively binds albumin and IgG and enhances the visibility of low-abundance proteins. Albumin and IgG Removal Kit improves on the currently available Cibacron Blue dye-based technology, which lacks selectivity and removes low-abundance proteins of interest.

Features

- Innovative adsorption gel: Selective and efficient removal of >95% albumin and IgG from 10–15 µl human serum samples prior to 2-D electrophoresis
- Versatile: Simultaneously removes the two most abundant proteins, albumin and IgG, saving time and preventing protein loss
- Convenient format: Easy-to-use with minimal handling steps
- Complete kit includes everything you need for 10 sample preparations: Easy set-up and quick results
- Simple optimized protocol: Provides accurate, consistent, and reproducible results

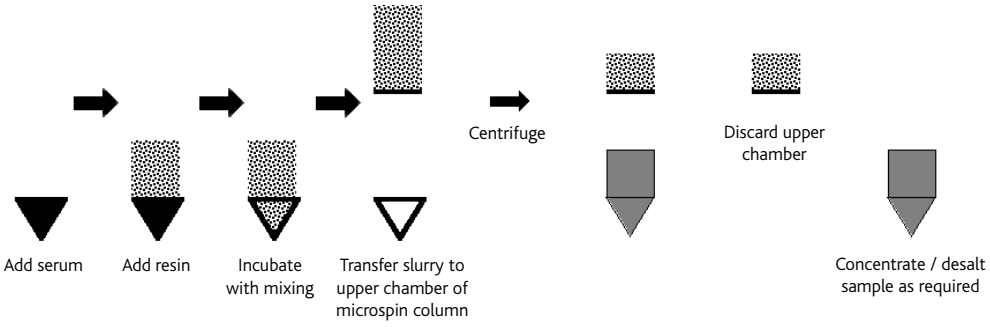
Contents

Each Albumin and IgG Removal Kit contains 8.5 ml of Affinity gel provided as a 50/50 (v/v) slurry (the gel binds human serum albumin and IgG)

10 'empty' Spin columns and 10 Microcentrifuge tubes without lids

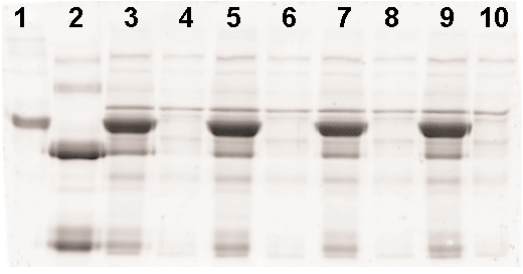
Each kit has sufficient material for 10 samples and each sample preparation will recover enough protein to run two 2-D gels

How it works



Schematic of the removal process
Optimal albumin and IgG binding (>95% total protein) is achieved using a 15 µl human serum loading and will typically lead to recovery of between 150–220 µg lower abundance proteins. The amount of protein recovered will vary with the protein content of the individual serum samples used.

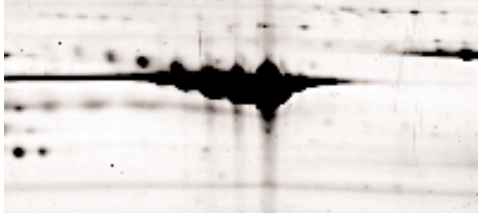
Results



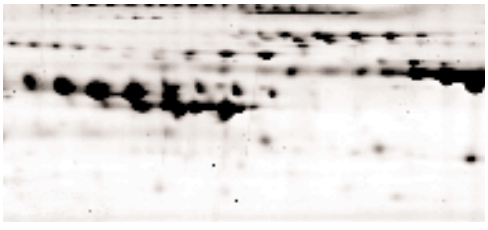
1 - Human Serum Albumin
2 - Human IgG
3 - Untreated serum
4 - Treated serum replicate 1
5 - Untreated serum
6 - Treated serum replicate 2
7 - Untreated serum
8 - Treated serum replicate 3
9 - Untreated serum
10 - Treated serum replicate 4

Four replicates of a human serum sample (lanes 4, 6, 8, and 10) were treated with Albumin and IgG Removal Kit using the standard protocol. Untreated human serum was diluted to an equivalent volume. Equivalent amounts of untreated and treated serum were separated onto a 12% acrylamide gel alongside purified albumin and IgG. The gel was stained with SYPRO™ Ruby and imaged on Typhoon™ 9400 Variable Mode Imager.

Untreated human serum



Human serum treated with Albumin and IgG Removal Kit



Focus on removal of albumin from human serum
Following treatment with Albumin and IgG Removal Kit, albumin is removed and lower-abundance proteins gain increased resolution. The albumin region of the gel before and after treatment is shown above.

Ordering Information	
Albumin and IgG Removal Kit for 10 samples	RPN 6300

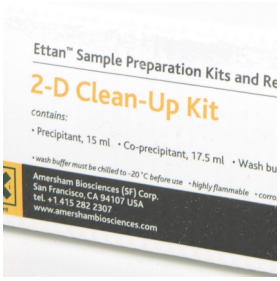
Sample clean-up and quantitation

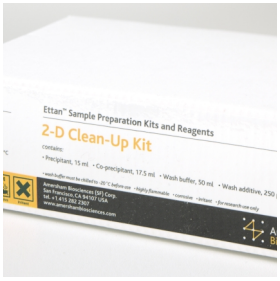
Protein precipitation is often applied prior to electrophoresis to selectively separate proteins in the sample from contaminating substances and to concentrate proteins from samples that are too dilute for effective analysis. However, most common methods of protein precipitation suffer from one or more significant failings when handling proteins in electrophoresis sample buffers. Precipitation can be incomplete, resulting in significant loss of total protein from the sample, introducing a bias to the result. The precipitated protein may be difficult to resuspend and often cannot be fully recovered. The precipitation procedure itself can introduce ions that interfere with electrophoresis. Some precipitation procedures can be time-consuming, requiring overnight incubation of the sample.

The 2-D Clean-Up and SDS-PAGE Clean-Up kits feature a method for selective and quantitative protein precipitation that is a fast, effective, and convenient solution to the limitations of conventional precipitation methods. Proteins from a wide variety of sources can be precipitated without interference from salts, detergents, chaotropes, and other reagents commonly used to solubilize protein. Recovery is generally close to 100%. The procedure does not result in selective loss or modification of proteins, and can be completed in about 90 minutes. For clean-up of small sample volumes, our Mini Dialysis kits offer simple, effective, and convenient dialysis using microcentrifuge tubes.

Knowing how much protein is in the sample is also important, particularly when quantitative comparisons are to be performed. However, most common protein assays fail when proteins are in electrophoresis sample buffers that may contain interfering detergents, reductants, chaotropes, or carrier ampholytes. The 2-D Quant Kit does not suffer from these limitations and accurately determines protein concentration in the presence of interfering electrophoresis buffer contaminants.

2-D Clean-Up Kit eliminates interfering substances in 2-D electrophoresis





The 2-D Clean-Up Kit prepares samples for 2-D electrophoresis that might otherwise produce poor 2-D spot-maps due to high conductivity, high levels of interfering substances, or low protein concentration. The reagents quantitatively precipitate proteins while leaving interfering substances such as detergents, salts, lipids, phenolics, and nucleic acids in solution. Treating the sample with 2-D Clean-Up Kit improves 2-D electrophoresis results by reducing streaking, background staining, and other artifacts due to interfering contaminants. Using 2-D Clean-Up Kit makes 2-D analysis possible for samples that are otherwise too contaminated or too dilute.

Features

- Complete kit with instructions for removing interfering contaminants from protein samples
- Quantitative precipitation: Separates proteins from detergents, salts, lipids, phenolics, and nucleic acids
- Rapid clean-up in 90 min
- Non-interfering: Does not result in spot gain or loss
- Versatile: Can be used to process samples of 100 µl and the procedure can be scaled-up for larger volumes or more dilute samples

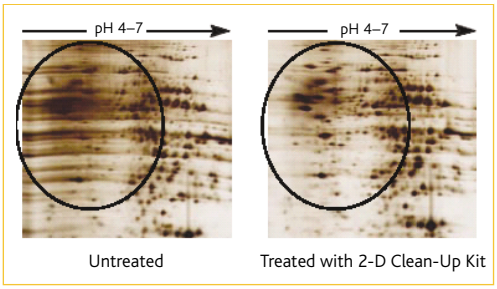
Contents

Each 2-D Clean-Up Kit contains Precipitant 15 ml, Coprecipitant 17.5 ml, Wash buffer 50 ml, Wash additive 250 µl, Quick reference card, and detailed Instructions

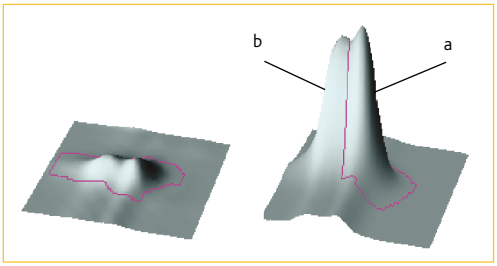
How it works

The 2-D Clean-Up Kit procedure uses precipitant and coprecipitant in combination to quantitatively precipitate the sample proteins. These proteins are pelleted by centrifugation and the precipitate is further washed to remove nonprotein contaminants. After a second centrifugation, the resultant pellet is resuspended into denaturing sample solution for first-dimension IEF.

Results



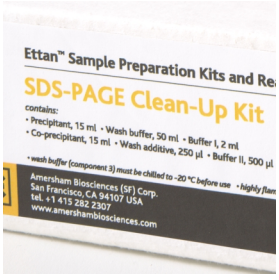
The 2-D Clean-Up Kit eliminates horizontal streaking caused by residual SDS
Sample: Rat liver extracted with 4% SDS, 40 mM Tris base. First dimension: Approximately 20 µg of rat liver protein, 7 cm Immobiline™ DryStrip pH 4–7, Ettan IPGphor 17.5 kVh. Second dimension: SDS-PAGE (12.5%), Hoefer™ SE 260 (8 × 9 cm gel). Stain: PlusOne™ Silver Staining Kit, Protein.



Outer membrane protein F-precursor is normally difficult to isolate from 2-D gels due to low abundance, but was successfully identified from a 2-D (100 µg total protein loading) gel using 2-D Clean-Up Kit for sample clean-up prior to 2-D DIGE analysis. Sample clean-up using 2-D Clean-Up Kit also allowed identification of two isomers of the protein (peak a and b), which were not observed in the untreated sample.

Ordering Information	
2-D Clean-Up Kit for 50 samples	80-6484-51

Remove interfering substances from SDS gels using SDS-PAGE Clean-Up Kit



SDS-PAGE Clean-Up Kit allows preparation of samples for SDS-PAGE that are difficult to analyze due to low protein concentrations or the presence of salts.

Features

- Complete kit with instructions to remove interfering contaminants from protein samples
- Quantitative precipitation: Separates proteins from detergents, salts, lipids, phenolics, and nucleic acids
- Rapid clean-up in 2 h with quantitative yield
- Non-interfering: Does not result in spot gain or loss
- Versatile: Can be used to process samples of 100 µl and the procedure can be scaled-up for larger volumes or more dilute samples

Contents

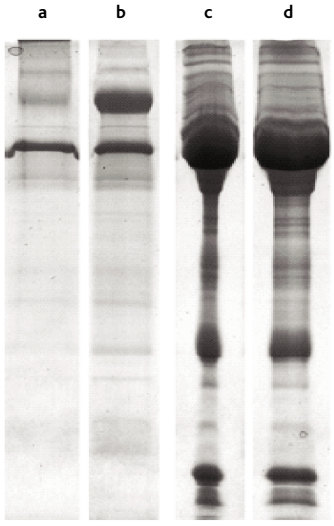
Each SDS-PAGE Clean-Up Kit contains Precipitant 15 ml, Coprecipitant 15 ml, Wash buffer 50 ml, Wash additive 250 µl, Buffer I 2 ml, Buffer II 500 µl, Sample buffer 2.5 ml, Quick reference cards, and detailed Instructions

How it works

SDS-PAGE Clean-Up Kit uses a precipitant and coprecipitant in combination to quantitatively precipitate the sample proteins while leaving interfering substances in solution.

Detergents, salts, lipids, phenolics, and nucleic acids remain soluble while the proteins are pelleted by centrifugation. The precipitate is washed to remove nonprotein contaminants and centrifuged again. The resultant pellet is resuspended, mixed with SDS-PAGE sample buffer, and heated. The sample is then ready to be loaded onto an SDS electrophoresis gel.

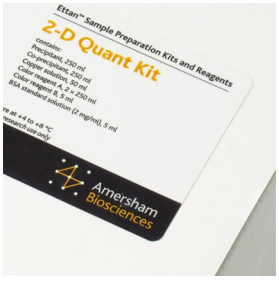
Results



Comparison of SDS-PAGE Clean-Up Kit with ethanol precipitation
(a) Urinary protein precipitated with 10 volumes of ethanol. (b) Urinary protein precipitated with SDS-PAGE Clean-Up Kit. (c) Cerebrospinal fluid protein precipitated with SDS-PAGE Clean-Up Kit. (d) Cerebrospinal fluid protein precipitated with SDS-PAGE Clean-Up Kit. Gel: 8 × 9 cm, 12.5% acrylamide, 0.1% SDS, run on Hoefer SE 260, Stain: Coomassie™ R250.

Ordering Information	
SDS-PAGE Clean-Up Kit for 50 samples	80-6484-70

Quantitate proteins reliably using 2-D Quant Kit



The 2-D Quant Kit is designed to precisely determine protein concentrations in samples prepared for electrophoresis techniques, such as 2-D electrophoresis, SDS-PAGE, or IEF. The kit accurately quantitates protein even in the presence of contaminants including detergents, reductants, chaotropes, and carrier ampholytes, which are incompatible with other protein assays.

Features

- Accurately determine protein concentration in the presence of 2% SDS, 1% DTT, 8 M urea, 2 M thiourea, 4% CHAPS, 2% Pharmalyte™, and 2% IPG Buffer
- Quantitatively precipitates proteins while leaving interfering substances behind
- Linear response in the range of 0 to 50 µg protein, with recommended sample volumes of 1 to 50 µl

Contents

Each 2-D Quant Kit contains Precipitant 250 ml, Coprecipitant 250 ml, Copper solution 50 ml, Color reagent A 2 × 250 ml, Color reagent B 5 ml, BSA standard 5 ml (2 mg/ml)

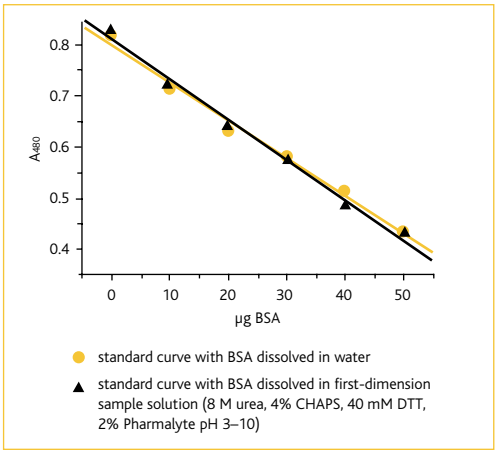
The kit contains reagents sufficient for 500 individual assays and the procedure can be completed in about 1 h

How it works

Common spectrophotometric methods of quantitating protein rely either on Coomassie dye binding or protein-catalyzed reduction of cupric (Cu^{2+}) to cuprous (Cu^{+}) ions. Dye-binding assays cannot be used in the presence of any reagent that also binds the dye. This includes carrier ampholytes and detergents such as CHAPS, SDS, and Triton X-100. Assays that depend on the reduction of cupric ions cannot be used in the presence of reductants such as DTT, or in the presence of reagents that form complexes with cupric ions, such as thiourea or EDTA.

The 2-D Quant Kit procedure works by quantitatively precipitating proteins while leaving interfering substances behind. The assay is based on the specific binding of copper ions to protein. Precipitated proteins are resuspended in a copper-containing solution and unbound copper is measured with a colorimetric agent. The color density at 480 nm is inversely related to the protein concentration. The assay has a linear response to protein in the range of 0 to 50 µg and recommended sample volume is 1 to 50 µl.

The procedure is compatible with such common sample preparation reagents as 2% SDS, 1% DTT, 8 M urea, 2 M thiourea, 4% CHAPS, 2% Pharmalyte, and 2% IPG Buffer.



The 2-D Quant Kit protein assay eliminates interference from sample solution components.

Ordering Information	
2-D Quant Kit for 500 assays	80-6483-56

Efficient dialysis of small sample volumes with Mini Dialysis Kits

Dialyzing small samples can be difficult and inefficient when the sample must be transferred into and out of dialysis bags and centrifuge tubes. The disposable tubes in Mini Dialysis Kit offer a simple solution to the handling problems of small volume dialysis. In addition to pre-electrophoresis sample preparation, they can be used for many other research applications.

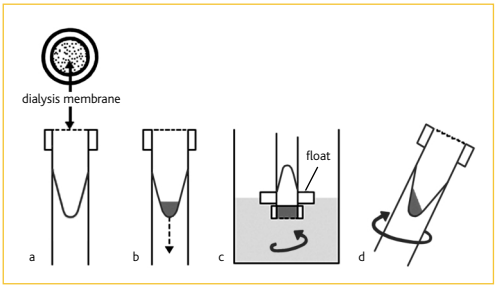
Features

- Easy-to-use compared to dialysis bags
- Designed for efficient dialysis of small sample volumes
- Uses disposable dialysis tubes with dialysis membrane incorporated into caps
- Conical tube bottom maximizes sample recovery
- Four choices for efficient dialysis based on molecular weight cut-off and volume
- Improves resolution in 2-D gels

Contents

Each Mini Dialysis Kit contains 50 tubes with dialysis caps, 6 floats with caps

How it works

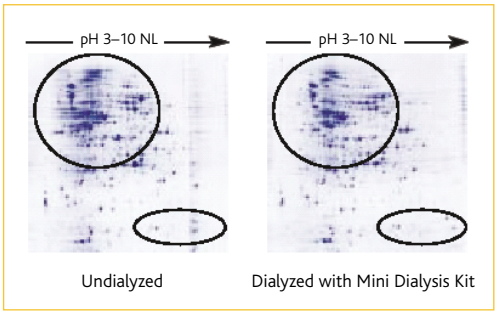


Sample dialysis using Mini Dialysis Kit
(a) Cap with dialysis membrane, conical inner sample tube. (b) Introduce sample, screw on cap, slide tube into float. (c) Invert and dialyze while stirring. (d) Spin briefly to collect sample.

Each dialysis tube in the kit contains a cap incorporating a small disk of dialysis membrane. Samples are easily pipetted into and removed from the conical bottom of the tube. The capped tube is inserted into a float and then, with the cap and membrane down, placed in a stirred beaker containing the desired dialysis solution.

Following dialysis, the tube is centrifuged briefly. This brings the entire contents of the tube back to the conical bottom for maximum recovery. The dialyzed sample can be stored in the same tube by simply replacing the dialysis cap with a normal cap.

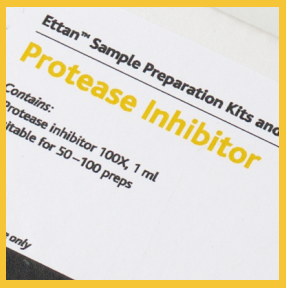
Results



Effect of dialysis on 2-D resolution Sample
E. coli protein extracted with 15 mM NaCl, 8 M urea, 0.5% Pharmalyte pH 3–10, 2% CHAPS. Dialysis: Mini Dialysis Kit 8 kDa cut-off, 250 µl sample for 17 h against 8 M urea. First dimension: Approximately 400 µg *E. coli* protein, 13 cm Immobiline DryStrip pH 3–10 NL, Ettan IPGphor 32 kVh. Second dimension: SDS-PAGE (12.5%), Hoefer SE 600 (16 × 16 cm gel). Stain: Colloidal Coomassie G250.

Ordering Information	
Mini Dialysis Kit 1 kDa cut-off, up to 250 µl for 50 samples	80-6483-75
Mini Dialysis Kit 1 kDa cut-off, up to 2 ml for 50 samples	80-6483-94
Mini Dialysis Kit 8 kDa cut-off, up to 250 µl for 50 samples	80-6484-13
Mini Dialysis Kit 8 kDa cut-off, up to 2 ml for 50 samples	80-6484-32

Cell lysis and homogenization



The first step in sample preparation and protein analysis is the disruption of cells or tissues, and homogenization. This is a critical step as proteins may be lost or modified if the procedure is not effective. The method used to isolate proteins from intact cells and tissues should minimize loss of proteins, especially membrane-bound proteins, maximize recovery, retain the structural integrity of the protein, avoid introducing new contaminants, and concentrate the sample to bring it into the optimal detection range.

Amersham Biosciences offers a range of products for effective cell lysis and homogenization: Our Sample Grinding Kit uses a standardized homogenization procedure that takes less than 10 minutes to perform. The kit incorporates a proprietary resin that does not interfere with subsequent analysis. Sample Grinding Kit can also be used to disrupt sample pellets during protein precipitation. The Protease Inhibitor Mix provides excellent inhibition of protease activities and is suitable for protection of proteins from animal tissues, plant tissues, yeast, and bacteria. The Nuclease Mix works in the presence of protease inhibitors to remove interfering nucleic acids.

Sample Grinding Kit makes sample disruption easy

Sample Grinding Kit is ready to use for disrupting small tissue and cell samples for protein extraction. The kit consists of 1.5 ml microcentrifuge tubes, each containing a small quantity of abrasive grinding resin suspended in water, and disposable pestles for grinding.

Sample Grinding Kit can also be used to disrupt the protein pellet processing of large samples using 2-D Clean-Up or SDS-PAGE Clean-Up kits.

Features

- Designed to disrupt small tissue and cell samples for protein extraction
- Uses 1.5 ml microcentrifuge tubes, grinding resin, and disposable pestles
- Process up to 100 mg of sample per tube in only minutes
- High protein recovery

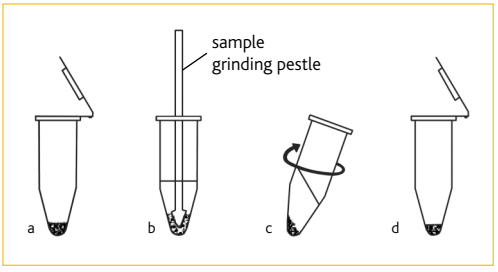
Contents

Each Sample Grinding Kit contains 50 Micro-centrifuge tubes with Grinding resin and 50 Pestles

Up to 100 mg of sample can be disrupted and typical processing time is 10 min, including centrifugation

How it works

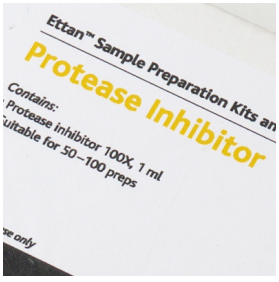
The tube is first centrifuged to pellet the resin and the water is removed. Then the extraction solution of choice and the sample are added to the tube and the pestle is used to grind the sample. After centrifugation, cellular debris and grinding resin pellet firmly in the bottom of the conical tube and the supernatant is easily pipetted out.

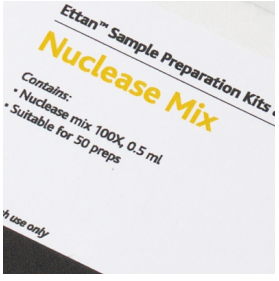


Sample disruption using Sample Grinding Kit
(a) Grinding resin pelleted in microcentrifuge tube. (b) Sample and extraction solution added and sample disrupted by grinding with pestle. (c) Spin out cellular debris and resin. (d) Collect supernatant.

Ordering Information	
Sample Grinding Kit for 50 samples	80-6483-37

Prevent unwanted proteolysis with Protease Inhibitor Mix and remove undesirable nucleic acids from 2-D maps with Nuclease Mix





Protease Inhibitor Mix

Sample preparation often includes the inhibition of protease activity. This requires the use of an optimized concentration of reversible and irreversible inhibitors for optimal action. Amersham Biosciences offers this unique combination with excellent inhibition of protease activities and the resultant protection of proteins during purification from animal tissues, plant tissues, yeast, and bacteria.

Features

- A protease cocktail specifically developed for sample preparation in 2-D-studies
- No EDTA is used which allows optimal action of nuclease activity for removing nucleic acids from samples
- Versatile: Contains a mixture of both irreversible and reversible protease inhibitors that inhibit serine, cysteine, metalloproteases, and calpains protease
- Optimized concentration for excellent inhibition of protease activities
- Effective: Inhibits over 95% protease activity

Contents:

Protease Inhibitor, 1 ml

Nuclease Mix

Removal of nucleic acids is often required to avoid contamination and subsequent artifacts on 2-D gels. Nuclease Mix offers an effective mix of enzymes with DNase and RNase activities, as well as the necessary cofactors for optimal nuclease activity.

Features

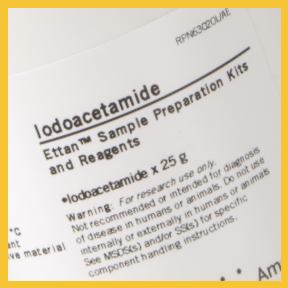
- Specifically developed for sample preparation for IEF/2-D electrophoresis applications in proteomic studies
- Compatible with Protease Inhibitor Mix
- Ready-to-use: Simply add the mix to your sample and incubate
- Does not contain EDTA, which is an inhibitor of nuclease

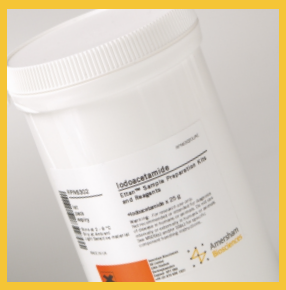
Contents

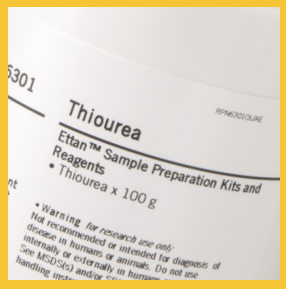
Nuclease Mix, 0.5 ml

Ordering Information	
Protease Inhibitor, 1 ml	80-6501-23
Nuclease Mix, 0.5 ml	80-6501-42

Quality reagents for quality results

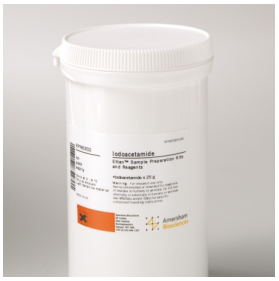


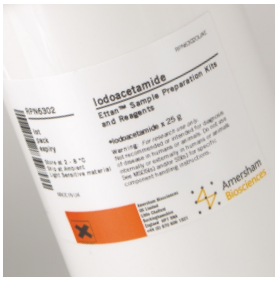


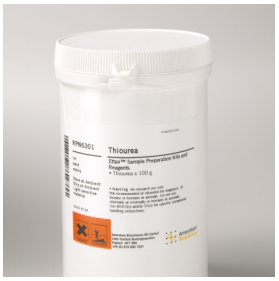


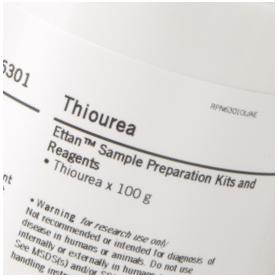
Amersham Biosciences offers unique, ultrapure reagents for various stages of the sample preparation workflow to eliminate artifacts and improve results.

DeStreak Reagent and Rehydration Solution









The appearance of streaks that distort 2-D electrophoresis maps is a common problem. These occur most frequently when running gels that contain regions with pH values greater than 7.0. Increased sample load, increased length of the IPG strip, or using a narrower pH gradient worsen the problem. Extra spots on 2-D gels, caused by nonspecific oxidation of proteins, is another difficulty encountered when running gels containing basic regions. Both streaking and nonspecific oxidation result in poorly resolved protein patterns and reduced reproducibility between electrophoresis runs.

DeStreak™ Rehydration Solution effectively eliminates nonspecific oxidation by maintaining protein thiol groups in a single oxidation state, irrespective of sample load, pH range, or run length. Protein patterns are stabilized in IPG strips of any length and pH gradient, ensuring the same stable and reproducible pattern in every analysis. DeStreak Rehydration Solution maintains its effectiveness even with the high sample loads and long run times required for preparative gel electrophoresis.

Features

- Improves reproducibility of 2-D gels
- Prevents streaking
- Prevents nonspecific oxidation
- Stabilizes protein patterns
- Suitable for analytical and preparative gels

Iodoacetamide

Ultrapure, proteomic grade Iodoacetamide is used for efficient alkylation of thiols while minimizing reoxidation of the competing thiol pairs in protein samples.

Thiourea

Thiourea is a chaotrope that is used together with urea in the IPG strip rehydration solution to solubilize and denature proteins, unfolding them to expose internal ionizable amino acids. Use of Thiourea increases the solubility of membrane proteins.

Ordering Information	
DeStreak Reagent, 1 ml	17-6003-18
DeStreak Rehydration Solution, 5 × 3 ml	17-6003-19
Iodoacetamide, 25 g	RPN 6302
Thiourea, 100 g	RPN 6301

Related products ordering information

Ordering Information	
Ettan IPGphor II Isoelectric Focusing System	
Ettan IPGphor II Isoelectric Focusing Unit	80-6505-03
Ettan IPGphor Cup Loading Manifold	80-6498-38
Multiphor II Electrophoresis System and accessories	
Multiphor II Electrophoresis Unit	18-1018-06
MultiTemp™ III Thermostatic Circulator, 115 V	18-1102-77
MultiTemp III Thermostatic Circulator, 230 V	18-1102-78
EPS 3501 XL Power Supply	19-1130-05
Ettan DALT Large Vertical Systems and accessories	
Ettan DALT*twelve* Separation Unit and Power Supply/Control Unit, 115 VAC	80-6466-46
Ettan DALT*twelve* Separation Unit and Power Supply/Control Unit, 230 VAC	80-6466-27
Ettan DALT*six* Separation Unit and Power Supply/Control Unit, 115 VAC	80-6485-08
Ettan DALT*six* Separation Unit and Power Supply/Control Unit, 230 VAC	80-6485-27
Ultrospec™ 3100 pro UV/Visible Spectrophotometer	Inquire

For a complete set of consumables for the first and second dimension, visit www.amershambiosciences.com or contact your local office.

Ordering Information	
Immobiline DryStrip Gels, quantity 12	
Immobiline DryStrip pH 3.5–4.5, 24 cm	17-6002-38
Immobiline DryStrip pH 4–5, 24 cm	17-6002-39
Immobiline DryStrip pH 4.5–5.5, 24 cm	17-6002-40
Immobiline DryStrip pH 5–6, 24 cm	17-6002-41
Immobiline DryStrip pH 5.5–6.7, 24 cm	17-6002-42
Immobiline DryStrip pH 6–9, 24 cm	17-6002-47
Immobiline DryStrip pH 3–7 NL, 24 cm	17-6002-43
Immobiline DryStrip pH 3–10, 24 cm	17-6002-44
Immobiline DryStrip pH 3–10 NL, 24 cm	17-6002-45
Immobiline DryStrip pH 4–7, 24 cm	17-6002-46
Immobiline DryStrip pH 3.5–4.5, 18 cm	17-6001-83
Immobiline DryStrip pH 4–5, 18 cm	17-6001-84
Immobiline DryStrip pH 4.5–5.5, 18 cm	17-6001-85
Immobiline DryStrip pH 5–6, 18 cm	17-6001-86
Immobiline DryStrip pH 5.5–6.7, 18 cm	17-6001-87
Immobiline DryStrip pH 4–7, 18 cm	17-1233-01
Immobiline DryStrip pH 6–9, 18 cm	17-6001-88
Immobiline DryStrip pH 6–11, 18 cm	17-6001-97
Immobiline DryStrip pH 3–10 NL, 18 cm	17-1235-01
Immobiline DryStrip pH 3–10, 18 cm	17-1234-01
Immobiline DryStrip pH 4–7, 13 cm	17-6001-13
Immobiline DryStrip pH 6–11, 13 cm	17-6001-96
Immobiline DryStrip pH 3–10 NL, 13 cm	17-6001-15
Immobiline DryStrip pH 3–10, 13 cm	17-6001-14
Immobiline DryStrip pH 4–7, 11 cm	18-1016-60
Immobiline DryStrip, pH 6–11, 11 cm	17-6001-95
Immobiline DryStrip pH 3–10, 11 cm	18-1016-61
Immobiline DryStrip pH 4–7, 7 cm	17-6001-10
Immobiline DryStrip, pH 6–11, 7 cm	17-6001-94
Immobiline DryStrip pH 3–10 NL, 7 cm	17-6001-12
Immobiline DryStrip pH 3–10, 7 cm	17-6001-11

Ordering Information	
PlusOne gel casting chemicals and buffers	
Acrylamide PAGE, 250 g	17-1302-01
Acrylamide PAGE, 1 kg	17-1302-02
Acrylamide IEF, 250 g	17-1300-01
Acrylamide IEF, 1 kg	17-1300-02
Acrylamide IEF, 40% solution 1 l	17-1301-01
Acrylamide PAGE, 40% solution	17-1303-01
N,N′ Methylene-bisacrylamide, 25 g	17-1304-01
N,N′ Methylene-bisacrylamide, 100 g	17-1304-02
N,N′ Methylene-bisacrylamide, 2% solution	17-1306-01
Glycine, 500 g	17-1323-01
Ammonium persulfate, 25 g	17-1311-01
TEMED, 25 ml	17-1312-01
Glycerol 87%, 1 l	17-1325-01
SDS, 100 g	17-1313-01
Ettan Sample Preparation Reagents	
Tris, 500 g	17-1321-01
Urea, 500 g	17-1319-01
CHAPS, 1 g	17-1314-01
Triton X-100, 500 ml	17-1315-01
Dithiothreitol (DTT), 1 g	17-1318-01
Bromophenol Blue, 10 g	17-1329-01
Immobiline DryStrip Cover Fluid, 1 l	17-1335-01
Amberlite IRN-150L, 500 g	17-1326-01

www.dowellstubbs.com June 2003. Printed in Sweden by ätta45

For more information about Ettan Sample Preparation Kits and Reagents
or our complete proteomics offering, visit:

www.ettanrightfromthestart.com

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Fax: +852 2811 5251

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Fax: +61 2 9899 7511

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Fax: 01 576 0616 27

Belgium
Tel: 0800 73888
Fax: 03 272 1637

Canada
Tel: 1 800 463 5800
Fax: 1 800 567 1008

Central, East & South East Europe
Tel: +43 1 982 3826
Fax: +43 1 985 8327

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Fax: 4516 2424

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Fax: 01 69 41 96 77

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Fax: 0761 4903 405

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Fax: 02 27302 212

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Fax: 81 3 5331 9370

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