Qproteome™ Plasma Membrane Protein Handbook

For fractionation of plasma membrane proteins from adherent cell culture samples
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit Contents</td>
<td>4</td>
</tr>
<tr>
<td>Storage</td>
<td>4</td>
</tr>
<tr>
<td>Quality Control</td>
<td>4</td>
</tr>
<tr>
<td>Safety Information</td>
<td>5</td>
</tr>
<tr>
<td>Product Warranty and Satisfaction Guarantee</td>
<td>6</td>
</tr>
<tr>
<td>Technical Assistance</td>
<td>6</td>
</tr>
<tr>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td>Principle and Procedure</td>
<td>7</td>
</tr>
<tr>
<td>Protocols</td>
<td></td>
</tr>
<tr>
<td>■ Fractionation of Plasma Membranes from Mammalian Cell Lysates</td>
<td>10</td>
</tr>
<tr>
<td>■ Acetone Precipitation of Protein Fractions</td>
<td>14</td>
</tr>
<tr>
<td>Troubleshooting Guide</td>
<td>14</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>15</td>
</tr>
<tr>
<td>QIAGEN Distributors</td>
<td>19</td>
</tr>
</tbody>
</table>
Kit Contents

Qproteome Plasma Membrane Protein Kit

<table>
<thead>
<tr>
<th>Number of preps</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lysis Buffer PM (10x)</td>
<td>7 ml</td>
</tr>
<tr>
<td>Lysis Solution PL</td>
<td>100 µl</td>
</tr>
<tr>
<td>Wash Buffer PW</td>
<td>7 ml</td>
</tr>
<tr>
<td>Elution Buffer PME For 15 ml</td>
<td></td>
</tr>
<tr>
<td>Binding Ligand PBL</td>
<td>120 µl</td>
</tr>
<tr>
<td>Strep-Tactin™ Magnetic Beads</td>
<td>2 x 1 ml</td>
</tr>
<tr>
<td>Protease Inhibitor Solution (100x)</td>
<td>300 µl</td>
</tr>
</tbody>
</table>

Storage

All kit components should be stored at 2–8°C upon arrival. Once reconstituted, Binding Ligand PBL can be stored for 4 months at 2–8°C. Elution Buffer should be stored at –20°C after reconstitution.

Quality Control

In accordance with QIAGEN’s ISO-certified Total Quality Management System, Qproteome Kits are tested against predetermined specifications to ensure consistent product quality.
Safety Information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs). These are available online in convenient and compact PDF format at www.qiagen.com/ts/msds.asp where you can find, view, and print the MSDS for each QIAGEN kit and kit component.

The following risk and safety phrases apply to the components of the Qproteome Plasma Membrane Protein Kit:

**Lysis Solution PL**
Contains Nonidet P40 Substitute. Irritant. Risk and safety phrases*: R41 S26-36/37/39

**Binding Ligand PBL**
Contains lectins. Sensitizer. Risk and safety phrases*: R42/43 S22-36/37-45

**24-hour emergency information**
Emergency medical information in English, French, and German can be obtained 24 hours a day from:
Poison Information Center Mainz, Germany, Tel: +49-6131-19240

* R41: Risk of serious damage to eyes. R42/43: May cause sensitization by inhalation and skin contact. S22: Do not breathe dust. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37: Wear suitable protective clothing and gloves. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Product Warranty and Satisfaction Guarantee

QIAGEN guarantees the performance of all products in the manner described in our product literature. The purchaser must determine the suitability of the product for its particular use. Should any product fail to perform satisfactorily due to any reason other than misuse, QIAGEN will replace it free of charge or refund the purchase price. We reserve the right to change, alter, or modify any product to enhance its performance and design. If a QIAGEN product does not meet your expectations, simply call your local Technical Service Department or distributor. We will credit your account or exchange the product — as you wish. Separate conditions apply to QIAGEN scientific instruments, service products, and to products shipped on dry ice. Please inquire for more information.

A copy of QIAGEN terms and conditions can be obtained on request, and is also provided on the back of our invoices. If you have questions about product specifications or performance, please call QIAGEN Technical Services or your local distributor (see inside back cover).

Technical Assistance

At QIAGEN we pride ourselves on the quality and availability of our technical support. Our Technical Service Departments are staffed by experienced scientists with extensive practical and theoretical expertise in molecular biology and the use of QIAGEN® products. If you have any questions or experience any difficulties regarding Qproteome Kits or QIAGEN products in general, please do not hesitate to contact us.

QIAGEN customers are a major source of information regarding advanced or specialized uses of our products. This information is helpful to other scientists as well as to the researchers at QIAGEN. We therefore encourage you to contact us if you have any suggestions about product performance or new applications and techniques.

For technical assistance and more information please call one of the QIAGEN Technical Service Departments or local distributors (see inside back cover).
Introduction

Proteomic analysis of organelles or specific groups of proteins is a potentially powerful strategy for the discovery of proteins that are involved in specific cellular functions or disease. Targeted enrichment of specific groups of proteins or subcellular organelles reduces the complexity of samples and simplifies such approaches.

The subset of cellular proteins that is associated with plasma membranes is of high biological importance. The plasma membrane delineates the cell and provides a physical boundary between the cell and its environment. Plasma membrane proteins play important roles in cell–cell interactions, material transport, and signal transduction. Integral and peripheral membrane proteins e.g., G-protein coupled receptors (GPCRs), receptors for growth factors and cytokines, receptor-associated signaling proteins, and ion-channels are major focuses for new drug targets.

Principle and Procedure

The Qproteome Plasma Membrane Kit is designed for fast and easy fractionation of plasma membrane proteins. Cells are incubated in a hypotonic buffer, causing them to swell. After the addition of a mild detergent, the resulting cell suspension is homogenized by mechanical disruption using a needle and syringe. Intact cells, cell debris, nuclei and the major organelles are removed by centrifugation. The resulting supernatant contains cytosolic proteins and microsomes — small vesicles (20–200 nm in diameter) formed from the endoplasmatic reticulum, Golgi vesicles, and plasma membranes.

A ligand specific for molecules on the plasma membrane is added to the supernatant. The ligand binds to the plasma membrane vesicles and the ligand–vesicle complexes are precipitated using magnetic beads that bind to the ligand. After washing, plasma membrane vesicles are eluted under native conditions and the ligand remains bound to the beads.

Starting material for one fractionation procedure is $1 \times 10^7$ adherent cells. This corresponds to three to four 75 cm² cell flasks at 60–70% confluence. The procedure has been used successfully with several different adherent mammalian cell lines, including HeLa, HEK293, and NIH3T3. Depending on the cell line, the yield from a single fractionation procedure is 30–100 µg protein. For some downstream applications, concentration of the elution fractions may be necessary. A protocol for protein concentration using acetone precipitation can be found on page 14.
Plasma Membrane Protein Fractionation Procedure

Lyse

Add Binding Ligand PBL

Add Strep-Tactin Magnetic Beads

Elute plasma membrane proteins

Fractionated plasma membrane proteins
Efficient Separation of Plasma Membrane Proteins

HeLa

<table>
<thead>
<tr>
<th>Protein (cell compartment)</th>
<th>CL</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadherin (plasma membrane)</td>
<td><img src="image1.png" alt="image" /></td>
<td><img src="image2.png" alt="image" /></td>
</tr>
<tr>
<td>Na/K-ATPase (plasma membrane)</td>
<td><img src="image3.png" alt="image" /></td>
<td><img src="image4.png" alt="image" /></td>
</tr>
<tr>
<td>Calreticulin (endoplasmic reticulum)</td>
<td><img src="image5.png" alt="image" /></td>
<td><img src="image6.png" alt="image" /></td>
</tr>
<tr>
<td>GAPDH (cytosol)</td>
<td><img src="image7.png" alt="image" /></td>
<td><img src="image8.png" alt="image" /></td>
</tr>
<tr>
<td>GS28 (Golgi apparatus)</td>
<td><img src="image9.png" alt="image" /></td>
<td><img src="image10.png" alt="image" /></td>
</tr>
<tr>
<td>TIM23 (mitochondria)</td>
<td><img src="image11.png" alt="image" /></td>
<td><img src="image12.png" alt="image" /></td>
</tr>
</tbody>
</table>

NIH3T3

<table>
<thead>
<tr>
<th>Protein (cell compartment)</th>
<th>CL</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image13.png" alt="image" /></td>
<td><img src="image14.png" alt="image" /></td>
<td></td>
</tr>
<tr>
<td><img src="image15.png" alt="image" /></td>
<td><img src="image16.png" alt="image" /></td>
<td></td>
</tr>
<tr>
<td><img src="image17.png" alt="image" /></td>
<td><img src="image18.png" alt="image" /></td>
<td></td>
</tr>
<tr>
<td><img src="image19.png" alt="image" /></td>
<td><img src="image20.png" alt="image" /></td>
<td></td>
</tr>
<tr>
<td><img src="image21.png" alt="image" /></td>
<td><img src="image22.png" alt="image" /></td>
<td></td>
</tr>
<tr>
<td><img src="image23.png" alt="image" /></td>
<td><img src="image24.png" alt="image" /></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 Plasma membrane proteins were purified from either HeLa or NIH3T3 cell cultures using the Qproteome Plasma Membrane Protein Kit. Cell lysates (CL) and elution fractions (E) were separated by SDS-PAGE and transferred to a nitrocellulose membrane by western blotting. Proteins regarded as markers for different cell compartments were detected using protein-specific antibodies and an HRP-conjugated secondary antibody with chemiluminescent detection.
Protocol: Fractionation of Plasma Membranes from Mammalian Cell Lysates

The volumes given in this protocol are suitable for processing of $1 \times 10^7$ adherent mammalian cells. This corresponds to three to four 75 cm$^2$ cell flasks at 60–70% confluence. When processing larger or smaller cultures, adjust the volume of buffer used accordingly.

Equipment and reagents be supplied by the user

- Ice-cold PBS
- 15 ml conical tube
- Microcentrifuge tubes
- Magnetic separator
- Needle (preferably 26 or 21 gauge) and syringe (1 ml or 2 ml volume) for cell disruption and homogenization
- Optional: Acetone stored at −20°C

Important notes before starting

- All steps are performed at 4°C. Use pre-cooled buffers. Separated protein fractions should be snap-frozen in liquid nitrogen and stored at −80°C.
- For downstream applications (e.g., SDS-PAGE analysis) elution fractions should be pooled and concentrated, e.g., by acetone precipitation.
- Binding Ligand PBL and Elution Buffer PME must be reconstituted in the supplied containers before lysing cells. Once reconstituted, Binding Ligand PBL should be stored at 2–8°C and Elution Buffer PME should be stored at −20°C.

Procedure

Preparation of Binding Ligand PBL

1. Pipet 120 µl water into the tube containing Binding Ligand PBL. Place on ice for 5 min. Vortex for 10 s at maximum speed and incubate for 20 min on an end-over-end shaker at 4°C.
Preparation of Elution Buffer PME

2. Reconstitute Elution Buffer PME in 15 ml of Lysis Buffer PM (1x) by pipetting 13.5 ml water, 1.5 ml Lysis Buffer PM (10x), and 150 µl Protease Inhibitor Solution (100x) into the Elution Buffer PME bottle. Vortex for 10 s at maximum speed and incubate for 20 min on an end-over-end shaker at 4°C. Place buffer on ice.

Preparation of Lysis Buffer PM (1x) with and without protease inhibitors

3. For each preparation (1 x 10^7 cells) prepare 7 ml Lysis Buffer PM (1x). Pipet 700 µl Lysis Buffer PM (10x) into a 15 ml conical tube and add 6.3 ml water. Mix by briefly vortexing.

   Lysis Buffer PM (1x) without protease inhibitors is used for washing cells in steps 6 and 7.

4. Pipet 2.5 ml of Lysis Buffer PM (1x) into a separate tube and add 25 µl Protease Inhibitor Solution (100x). Mix by vortexing briefly.

   Lysis Buffer PM (1x) with protease inhibitors is used for cell resuspension in step 8, and Strep-Tactin Bead equilibration and washing (steps 15–17 and 21–22).

Cell collection

5. Collect cells by using a cell scraper. Centrifuge for 5 min at 450 x g and wash the cell pellet with PBS.

6. Resuspend the cell pellet from step 5 by adding 2 ml Lysis Buffer PM without protease inhibitors and gently pipetting up and down. Centrifuge for 5 min at 450 x g. Remove and discard supernatant.

7. Repeat step 6 using a second 2 ml aliquot of Lysis Buffer PM without protease inhibitors.

Cell lysis

8. Resuspend the cell pellet in 500 µl Lysis Buffer PM with protease inhibitors and transfer the cell suspension to a new microcentrifuge tube.

9. Incubate for 15 min at 4°C. Vortex briefly every 5 min.

10. Add 2.5 µl of Lysis Solution PL to the cell suspension. Mix by briefly vortexing and incubate for 5 min at 4°C.

11. Complete cell disruption using a needle and a syringe (not provided). Draw the lysate slowly into the syringe and eject with one stroke. Repeat 15 times.

12. Centrifuge the cell lysate at 12,000 x g and 4°C for 20 min.
Binding plasma membrane vesicles

13. Transfer the supernatant into a new microcentrifuge tube and add 20 µl of reconstituted Binding Ligand PBL prepared in step 1. Remaining Binding Ligand PBL should be stored at 2–8°C and used within 4 months.

14. Incubate the reaction with gentle agitation for 60 min on an end-over-end shaker at 4°C.

Separating ligand-bound vesicles

15. During the incubation in step 14 equilibrate an aliquot of StrepTactin Magnetic Beads. Vortex the magnetic beads vigorously to obtain a homogenous suspension. Transfer 300 µl of the bead suspension into a new microcentrifuge tube. Place the tube on a magnetic separator for 1 min and remove supernatant with a pipet.

16. Remove tube from the magnet, add 500 µl Lysis Buffer PM with protease inhibitors, mix the suspension, place the tube on a magnetic separator for 1 min, and remove the buffer completely.

17. Remove tube from the magnet and add 100 µl Lysis Buffer PM with protease inhibitors. Resuspend beads by gently vortexing. Place the tube on ice.

18. Add the equilibrated magnetic beads prepared in step 17 to the reaction mix from step 14.

19. Incubate the reaction with gentle agitation for 60 min on an end-over-end shaker at 4°C.

20. Place the tube on a magnetic separator for 1 min and remove supernatant with a pipet.

21. Remove tube from the magnet, add 500 µl of Lysis Buffer PM with protease inhibitors, resuspend beads by gently vortexing, incubate on ice for 5 min, place the tube on a magnetic separator for 1 min, and completely remove and discard supernatant.

22. Repeat step 21.

23. Remove tube from the magnet, add 500 µl of Wash Buffer PW, resuspend beads by gently vortexing, incubate on ice for 5 min, place the tube on a magnetic separator for 1 min, and completely remove and discard supernatant.

24. Repeat step 23.
Eluting plasma membrane proteins

25. Remove tube from the magnet, add 500 µl of Elution buffer PME (prepared in step 2), mix by gently vortexing, incubate on ice for 5 min, place the tube on a magnetic separator for 1 min, remove supernatant completely and transfer the eluate into a new microcentrifuge tube. Place the tube with the eluate on ice. Remaining Elution Buffer PME should be stored at –20°C.

26. Repeat step 25 three times. Combine all four eluates in a single tube.
Protocol: Acetone Precipitation of Protein Fractions

This protocol is suitable for concentrating and desalting protein samples for downstream applications such as 2D-PAGE.

1. Add four volumes of ice-cold acetone to the protein fraction and incubate for 15 min on ice.
2. Centrifuge for 10 min at 12,000 x g in a pre-cooled microcentrifuge at 4°C. Discard the supernatant and air dry the pellet. Do not overdry the pellet as this may make it difficult to resuspend.
3. Depending on the application, resuspend the pellet in the required sample buffer.

Troubleshooting Guide

<table>
<thead>
<tr>
<th>Inconsistent results in protein quantification assays</th>
<th>Comments and Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) The elution buffer contains components that may interfere with protein quantification assays</td>
<td>Use a protein assay that includes a precipitation step to remove interfering substances. Alternatively precipitate a portion of the eluate using acetone and dissolve the protein pellet in a reagent for suitable your protein assay.</td>
</tr>
<tr>
<td>b) A precipitate is visible in Elution Buffer PME after thawing</td>
<td>This does normally not affect experimental results. To clear the buffer, gently warm to 37°C, mix well, and cool on ice before use.</td>
</tr>
</tbody>
</table>

Poor recovery of plasma membrane proteins

| a) Recommended buffer not used | Use only the buffers supplied with the kit, for which the protocol is optimized. |
| b) Inefficient cell lysis | Check cell lysis by trypan blue staining. Increase the number of syringe strokes in protocol step 11. |
### Ordering Information

<table>
<thead>
<tr>
<th>Product</th>
<th>Contents</th>
<th>Cat. no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qproteome Plasma Membrane Protein Kit</td>
<td>Buffers and reagents for 6 high-purity plasma membrane protein preparations</td>
<td>37601</td>
</tr>
<tr>
<td><strong>Related products</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qproteome Mitochondria Isolation Kit</td>
<td>Buffers and reagents for 12 high-purity mitochondrial preparations</td>
<td>37612</td>
</tr>
<tr>
<td>Qproteome Mammalian Protein Prep Kit</td>
<td>For approximately 100 protein preparations from cultured mammalian cells: Buffer, Reagents, Protease Inhibitor Solution, Benzonase</td>
<td>37901</td>
</tr>
<tr>
<td>Qproteome Nuclear Protein Kit</td>
<td>For 6 nuclear protein preparations: Buffers, Reagents, Protease Inhibitor Solution, Benzonase</td>
<td>37582</td>
</tr>
<tr>
<td>Qproteome Nuclear Subfractionation Kit</td>
<td>For 6 nuclear protein preparations: Buffers, Reagents, Nuclear protein Fractionation Columns (6), Nuclear Protein Fractionation Resin, Protease Inhibitor Solution, Benzonase</td>
<td>37531</td>
</tr>
<tr>
<td>Qproteome Albumin/IgG Depletion Kit</td>
<td>For albumin/IgG depletion of 6 serum or plasma samples: Albumin/IgG Depletion Spin Columns (6)</td>
<td>37521</td>
</tr>
<tr>
<td>Qproteome Murine Albumin Depletion Kit</td>
<td>For albumin depletion of 6 murine serum or plasma samples: Murine Albumin Depletion Spin Columns (6)</td>
<td>37591</td>
</tr>
<tr>
<td>Qproteome Total Glycoprotein Kit</td>
<td>For 6 total glycoprotein preps: Buffers, Lectin Spin Columns (6), Detergent Solution, Protease Inhibitor Solution, Collection Tubes (6 x 2 ml)</td>
<td>37541</td>
</tr>
<tr>
<td>Qproteome Mannose Glycoprotein Kit</td>
<td>For 6 mannose glycoprotein preps: ConA, GNA, and LCH Lectin Spin Columns (2 each); Buffers; Detergent Solution; Protease Inhibitor Solution; Collection Tubes (6 x 2 ml)</td>
<td>37551</td>
</tr>
<tr>
<td>Product</td>
<td>Contents</td>
<td>Cat. no.</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Qproteome Sialic Glycoprotein Kit</td>
<td>For 6 sialic acid glycoprotein preps: WGA, SNA, and MAL Lectin Spin Columns (2 each); Buffers; Detergent Solution; Protease Inhibitor Solution; Collection Tubes (6 x 2 ml)</td>
<td>37561</td>
</tr>
<tr>
<td>Qproteome O-Glycan Glycoprotein Kit</td>
<td>For 6 O-glycan glycoprotein preps: AIL and PNA Lectin Spin Columns (3 each); Buffers; Protease Inhibitor Solution; Collection Tubes (6 x 2 ml)</td>
<td>37571</td>
</tr>
<tr>
<td>Qproteome Soluble Protein Separation Kit</td>
<td>For 10 soluble protein fractionations: Fractionation Buffer, Precipitation Reagents, Protease Inhibitor Solution, Benzonase</td>
<td>37512</td>
</tr>
<tr>
<td>Qproteome Cell Compartment Kit</td>
<td>For 10 subcellular fractionations: Extraction buffers, Protease Inhibitor Solution, Benzonase</td>
<td>37502</td>
</tr>
<tr>
<td>PhosphoProtein Purification Kit (6)</td>
<td>6 PhosphoProtein Purification Columns, 6 Nanosep® Ultrafiltration Columns, Reagents, Buffers</td>
<td>37101</td>
</tr>
</tbody>
</table>
QIAGEN Companies

Please see the back cover for contact information for your local QIAGEN office.

QIAGEN Distributors

Argentina
Tecnolab S.A.
Tel: (011) 4555 0010
Fax: (011) 4553 3331
E-mail: info@tecnolab.com.ar
Web site: www.tecnolab.com.ar

Brazil
Uniscience do Brasil
Tel: 011 3622 2320
Fax: 011 3622 2323
E-mail: info@uniscience.com
Web site: www.uniscience.com

Chile
Biosonda SA
Tel: 562 209 6770
Fax: 562 274 5462
E-mail: ventas@biosonda.cl
Web site: www.biosonda.cl

China
Gene Company Limited
Tel: (852)2896-6283
Fax: (852)2515-9371
E-mail:
Hong Kong:
info@genehk.com
Beijing:
info_bj@genecompany.com
Shanghai:
info_sh@genecompany.com
Chengdu:
gene@public.cd.sc.cn
Guangzhou:
info_gz@genecompany.com

Croatia
INEL Medicinska Tehnika d.o.o.
Tel: (01) 2984 898
Fax: (01) 6250-966
E-mail: inel-medicinska-tehnika@tg.htnet.hr

Cyprus
Scientronics Ltd
Tel: 02-357 22 764164
Fax: 02-357 22 764164
E-mail: o.sarpeas@biotronics.com.cy

Czech Republic
BI-O-CONSULT spol. s r.o.
Tel/Fax: (420) 2 417 79 792
E-mail: info@biocnsult.cz
Web site: www.biocnsult.cz

Egypt
Clinikab
Tel: 52 57 212
Fax: 52 57 210
E-mail: Clinlab@link.net

Estonia
BioAnalytics S.A.
Tel: (210)-640 03 18
Fax: (210)-646 27 48
E-mail: bioanalytics@hol.gr
Web site: www.bioanalytics.gr

Hungary
Kasztel-Med Co. Ltd.
Tel: (01) 385 3887
Fax: (01) 381 0695
E-mail: info@kasztel.hu
Web site: www.kasztel.hu

India
Gene10x
Tel: (011)-2542 1714
or (011)-2515 9346
Fax: (011)-2546 7637
E-mail: genes10x@vsnl.net.in

Israel
Westburg (Israel) Ltd.
Tel: 08-6906655
or 1-800 20 22 20 (toll free)
Fax: 08-6906650
E-mail: info@westburg.co.il
Web site: www.westburg.co.il

Korea
URS Laboratories, Inc.
Tel: (02) 924-86 97
Fax: (02) 924-86 96
E-mail: webmaster@urslab.co.kr
Web site: www.urslab.co.kr

Malaysia
RESEARCH BIOCABS SDN. BHD.
Tel: (603) 8070 3101
Fax: (603) 8070 5101
E-mail: biocabs@tm.net.my
Web site: www.researchbiocabs.com

Mexico
Quimica Valaner S.A. de C.V.
Tel: (55) 55 25 57 25
Fax: (55) 55 25 56 25
E-mail: ventas@valaner.com
Web site: www.valaner.com

New Zealand
Biolab Ltd
Tel: (09) 980 6700
or 0800 933 966
Fax: (09) 980 6788
E-mail: biosciences@nbl.biolabgroup.com
Web site: www.biolabgroup.com/nzl

Poland
Syngen Biotech Sp.z.o.o.
Tel: (071) 798 58 50 - 52
Fax: (071) 798 58 53
E-mail: info@syngen.pl
Web site: www.syngen.pl

Portugal
IZASA PORTUGAL, LDA
Tel: (21) 424 7312
Fax: (21) 417 2674
E-mail: consultasbiotec@izasa.es

Taiwan
TAIGEN Bioscience Corporation
Tel: (02) 2880 2913
Fax: (02) 2880 2916
E-mail: taigen@ms10.hinet.net

Turkey
Meden Medikal Ürünler ve Sağlık Hizmetleri A. S.
Tel: (216) 302 15 88
E-mail: makilat@med-ek.com

All other countries
QIAGEN GmbH, Germany

Qproteome Plasma Membrane Protein Handbook 04/2006 19
Australia = Orders 03-9840-9800 = Fax 03-9840-9888 = Technical 1-800-243-066

Austria = Orders 0800/28-10-10 = Fax 0800/28-10-19 = Technical 0800/28-10-11

Belgium = Orders 0800-79612 = Fax 0800-79611 = Technical 0800-79556

Canada = Orders 800-572-9613 = Fax 800-713-5951 = Technical 800-DNA-PREP (800-362-7737)

China = Orders 021-51345678 = Fax 021-51342500 = Technical 021-51345678

Denmark = Orders 80-885945 = Fax 80-885944 = Technical 80-885942

Finland = Orders 0800-914416 = Fax 0800-914415 = Technical 0800-914413

France = Orders 01-60-920-920 = Fax 01-60-920-925 = Technical 01-60-920-930

Germany = Orders 02103-29-12000 = Fax 02103-29-22000 = Technical 02103-29-12400

Ireland = Orders 1800 555 049 = Fax 1800 555 048 = Technical 1800 555 061

Italy = Orders 02-33430411 = Fax 02-33430426 = Technical 800 787980

Japan = Telephone 03-5547-0811 = Fax 03-5547-0818 = Technical 03-5547-0811

Luxembourg = Orders 8002-2076 = Fax 8002-2073 = Technical 8002-2067

The Netherlands = Orders 0800-0229592 = Fax 0800-0229593 = Technical 0800-0229602

Norway = Orders 800-18859 = Fax 800-18817 = Technical 800-18712

Sweden = Orders 020-790282 = Fax 020-790582 = Technical 020-798328


UK = Orders 01293-422-911 = Fax 01293-422-922 = Technical 01293-422-999

USA = Orders 800-426-8157 = Fax 800-718-2056 = Technical 800-DNA-PREP (800-362-7737)