1. INTENDED USE 3
2. STORAGE, EXPIRATION 3
3. INTRODUCTION 4
4. TEST PRINCIPLE 5
5. PRECAUTIONS 5
6. TECHNICAL HINTS 6
7. REAGENT SUPPLIED 6
8. MATERIAL REQUIRED BUT NOT SUPPLIED 7
9. PREPARATION OF REAGENTS 7
10. PREPARATION OF SAMPLES 9
11. ASSAY PROCEDURE 10
12. CALCULATIONS 12
13. PERFORMANCE CHARACTERISTICS 13
14. DEFINITION OF THE STANDARD 15
15. METHOD COMPARISON 15
16. TROUBLESHOOTING AND FAQS 15
17. REFERENCES 16
18. EXPLANATION OF SYMBOLS 17

This kit is manufactured by:
BioVendor – Laboratorní medicína a.s.

Use only the current version of Product Data Sheet enclosed with the kit!
1. INTENDED USE

The RD191362200R Human Cyclophilin 40 ELISA is a sandwich enzyme immunoassay for the quantitative measurement of human cyclophilin 40.

Features

- **It is intended for research use only**
- The total assay time is less than 4.5 hours
- The kit measures cyclophilin 40 in serum and plasma (EDTA, citrate) and tissue extract
- Assay format is 96 wells
- Standard is recombinant protein based
- Components of the kit are provided ready to use, concentrated or lyophilized

2. STORAGE, EXPIRATION

Store the complete kit at 2-8°C. Under these conditions, the kit is stable until the expiration date (see label on the box).

For stability of opened reagents see Chapter 9.
3. INTRODUCTION

Cyclophilins are a group of cellular proteins (collectively known as immunophilins), which display the enzymatic activity of a peptidyl-prolyl isomerase (PPIase). Cyclophilins are expressed in all prokaryotic and eukaryotic cells and share a common domain of approximately 109 amino acids. One of the most studied phenomena related to cyclophilins is their interaction with immunosuppressant drugs [1,2].

Cyclophilin 40 (CyP40, rotamase D, PPID) was first described as a cyclosporine A (CsA) binding protein and part of the inactivated estrogen receptor complex [3]. CyP 40, the product of the PPID gene, is a cytosolic protein containing 370 amino acids and shares many structural features of mitochondrial CyPD. CyP 40 functions include contributing to protein folding, ligand binding, and nuclear localization of glucocorticoid, estrogen and progesterone receptors. One of the important roles of CyP 40 is to help with the assembling of heat shock protein Hsp90 in chaperone protein-folding machinery [1].

Many functions of Hsp90 are dependent on its association with co-chaperone proteins. Co-chaperones mediate various aspects of Hsp90 function, including the association of Hsp90 with client proteins and the regulation of Hsp90 ATPase activity. CyP 40 is a member of the immunophilin family of Hsp90 co-chaperones. This family is characterized by its association with Hsp90-steroid hormone receptor complexes containing client proteins such as the glucocorticoid, estrogen, progesterone, and androgen receptors. Immunophilin co-chaperones are important in cancer, as CyP40 has been shown to promote the proliferation of androgen-dependent and androgen-independent prostate cancer cell lines [4].

A recent study showed that CyP40 mRNA was over-expressed in breast cancer tissues as compared with normal breast control tissues, and CyP 40 mRNA was ubiquitously expressed in 10 breast cancer cell lines [5]. CyP40 also plays an important role in chronic hepatitis virus (HCV) replication [6]. Baker et al. demonstrated that CyP 40 is capable of disaggregating amyloid fibrils in vitro and data from this study implicate that CyP 40 is a potential therapeutic intervention for tauopathies and other amyloidogenic disorders [7].

Areas of investigation:
Oncology
Neurodegenerative disease
4. TEST PRINCIPLE

In the BioVendor Human Cyclophilin 40 ELISA, standards and samples are incubated in microplate wells pre-coated with polyclonal anti-human cyclophilin 40 antibody. After 120 minutes incubation and washing, biotin labelled polyclonal anti-human cyclophilin 40 antibody is added and incubated for 60 minutes with captured cyclophilin 40. After another washing, streptavidin-HRP conjugate is added. After 30 minutes incubation and the last washing step, the remaining conjugate is allowed to react with the substrate solution (TMB). The reaction is stopped by addition of acidic solution and absorbance of the resulting yellow product is measured. The absorbance is proportional to the concentration of cyclophilin 40. A standard curve is constructed by plotting absorbance values against concentrations of standards, and concentrations of unknown samples are determined using this standard curve.

5. PRECAUTIONS

- For professional use only
- Wear gloves and laboratory coats when handling immunodiagnostic materials
- Do not drink, eat or smoke in the areas where immunodiagnostic materials are being handled
- This kit may contain components of human or animal origin. These materials should be handled as potentially infectious
- Avoid contact with the acidic Stop Solution and Substrate Solution, which contains hydrogen peroxide and tetramethylbenzidine (TMB). Wear gloves and eye and clothing protection when handling these reagents. Stop and/or Substrate Solutions may cause skin/eyes irritation. In case of contact with the Stop Solution and the Substrate Solution wash skin/eyes thoroughly with water and seek medical attention, when necessary
- The materials must not be pipetted by mouth
6. TECHNICAL HINTS

- Reagents with different lot numbers should not be mixed
- Use thoroughly clean glassware
- Use deionized (distilled) water, stored in clean containers
- Avoid any contamination among samples and reagents. For this purpose, disposable tips should be used for each sample and reagent
- Substrate Solution should remain colourless until added to the plate. Keep Substrate Solution protected from light
- Stop Solution should remain colourless until added to the plate. The colour developed in the wells will turn from blue to yellow immediately after the addition of the Stop Solution. Wells that are green in colour indicate that the Stop Solution has not been mixed thoroughly with the Substrate Solution
- Dispose of consumable materials and unused contents in accordance with applicable national regulatory requirements

7. REAGENT SUPPLIED

<table>
<thead>
<tr>
<th>Kit Components</th>
<th>State</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibody Coated Microtiter Strips</td>
<td>ready to use</td>
<td>96 wells</td>
</tr>
<tr>
<td>Biotin Labelled Antibody</td>
<td>lyophilized</td>
<td>2 vials</td>
</tr>
<tr>
<td>Streptavidin-HRP Conjugate</td>
<td>ready to use</td>
<td>13 ml</td>
</tr>
<tr>
<td>Master Standard</td>
<td>lyophilized</td>
<td>2 vials</td>
</tr>
<tr>
<td>Biotin-Ab Diluent</td>
<td>ready to use</td>
<td>13 ml</td>
</tr>
<tr>
<td>Dilution Buffer</td>
<td>ready to use</td>
<td>20 ml</td>
</tr>
<tr>
<td>Wash Solution Conc. (10x)</td>
<td>concentrated</td>
<td>100 ml</td>
</tr>
<tr>
<td>Substrate Solution</td>
<td>ready to use</td>
<td>13 ml</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>ready to use</td>
<td>13 ml</td>
</tr>
<tr>
<td>Product Data Sheet + Certificate of Analysis</td>
<td>-</td>
<td>1 pc</td>
</tr>
</tbody>
</table>
8. MATERIAL REQUIRED BUT NOT SUPPLIED

- Deionized (distilled) water
- Test tubes for diluting samples
- Glassware (graduated cylinder and bottle) for Wash Solution (Dilution Buffer)
- Precise pipettes to deliver 5-1000 μl with disposable tips
- Multichannel pipette to deliver 100 μl with disposable tips
- Absorbent material (e.g. paper towels) for blotting the microtitrate plate after washing
- Vortex mixer
- Orbital microplate shaker capable of shaking at approximately 300 rpm
- Microplate washer (optional). [Manual washing is possible but not preferable.]
- Glassware (graduated cylinder and bottle) for Wash Solution (Dilution Buffer)
- Test tubes for diluting samples
- Deionized (distilled) water
- Microplate reader with 450 ± 10 nm filter, preferably with reference wavelength 630 nm (alternatively another one from the interval 550-650 nm)
- Software package facilitating data generation and analysis (optional)

9. PREPARATION OF REAGENTS

- All reagents need to be brought to room temperature prior to use
- Always prepare only the appropriate quantity of reagents for your test
- Do not use components after the expiration date marked on their label
- Assay reagents supplied ready to use:

  Antibody Coated Microtiter Strips
  Stability and storage:
  Return the unused strips to the provided aluminium zip-sealed bag with desiccant and seal carefully. Remaining Microtiter Strips are stable 3 months when stored at 2-8°C and protected from the moisture.

  Streptavidin-HRP Conjugate
  Biotin-Ab Diluent
  Dilution Buffer
  Substrate Solution
  Stop Solution
  Stability and storage:
  Opened reagents are stable 3 months when stored at 2-8°C.
• Assay reagents supplied concentrated or lyophilized:

Human Cyclophilin 40 Master Standard
Refer to the Certificate of Analysis for current volume of Dilution Buffer needed for reconstitution of standard!!!
Reconstitute the lyophilized Master Standard with Dilution Buffer just prior to the assay. Let it dissolve at least 15 minutes with occasional gentle shaking (not to foam). The resulting concentration of human cyclophilin 40 in the stock solution is \textbf{6000 pg/ml}.

Prepare set of standards using Dilution Buffer as follows:

<table>
<thead>
<tr>
<th>Volume of Standard</th>
<th>Dilution Buffer</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock</td>
<td>-</td>
<td>6000 pg/ml</td>
</tr>
<tr>
<td>250 µl of stock</td>
<td>250 µl</td>
<td>3000 pg/ml</td>
</tr>
<tr>
<td>250 µl of 3000 pg/ml</td>
<td>250 µl</td>
<td>1500 pg/ml</td>
</tr>
<tr>
<td>250 µl of 1500 pg/ml</td>
<td>250 µl</td>
<td>750 pg/ml</td>
</tr>
<tr>
<td>250 µl of 750 pg/ml</td>
<td>250 µl</td>
<td>375 pg/ml</td>
</tr>
<tr>
<td>250 µl of 375 pg/ml</td>
<td>250 µl</td>
<td>188 pg/ml</td>
</tr>
<tr>
<td>250 µl of 188 pg/ml</td>
<td>250 µl</td>
<td>94 pg/ml</td>
</tr>
</tbody>
</table>

Prepared Standards are ready to use, do not dilute them.
Stability and storage:
Do not store the reconstituted Master Standard and/or diluted standard solutions.

Biotin Labelled Antibody
Refer to the Certificate of Analysis for current volume of deionized water needed for reconstitution of Biotin Labelled Antibody!!!
Reconstitute the lyophilized Biotin Labelled Antibody with deionized water just prior to the assay. Let it dissolve at least 15 minutes with occasional gentle shaking (do not foam). Dilute Biotin Labelled Antibody Concentrate (100x) with Biotin-Ab Diluent e.g. 10 µl of Biotin Labelled Antibody Concentrate + 990 µl of Biotin-Ab Diluent for strip (8 wells).
Stability and storage:
Do not store the reconstituted and/or diluted Biotin Labelled Antibody solutions.

Wash Solution Conc. (10x)
Dilute Wash Solution Concentrate (10x) ten-fold in distilled water to prepare a 1x working solution. Example: 100 ml of Wash Solution Concentrate (10x) + 900 ml of distilled water for use of all 96-wells.
Stability and storage:
The diluted Wash Solution is stable 1 month when stored at 2-8°C. Opened Wash Solution Concentrate (10x) is stable 3 months when stored at 2-8°C.
10. PREPARATION OF SAMPLES

The kit measures cyclophilin 40 in serum, plasma (EDTA, citrate) and tissue extract.

Samples should be assayed immediately after collection or should be stored frozen. Thoroughly mix thawed samples just prior to the assay and avoid repeated freeze/thaw cycles, which may cause erroneous results. Avoid using hemolyzed or lipemic samples.

**An appropriate dilution should be assessed by the researcher prior to batch measurement.**

**Serum and plasma samples:**
Dilute samples 3x with Dilution Buffer just prior to the assay, e.g. 50 µl of sample + 100 µl of Dilution Buffer for singlets, or preferably 80 µl of sample + 160 µl of Dilution Buffer for duplicates. **Mix well** (not to foam). Vortex is recommended.

**Recommended starting dilution for tissue extract samples is 20x.**

**Stability and storage:**
Samples should be stored at -20°, or preferably at -70°C or lower for long-term storage. Avoid repeated freeze/thaw cycles. **Do not store the diluted samples.**

*Note: It is recommended to use a precise pipette and a careful technique to perform the dilution in order to get precise results.*
11. ASSAY PROCEDURE

1. Pipet 100 µl of diluted Standards, Dilution Buffer (=Blank) and diluted samples, preferably in duplicates, into the appropriate wells. See Figure 1 for example of work sheet.
2. Incubate the plate at 37°C for 2 hour, without shaking.
3. Wash the wells 3-times with Wash Solution (0.35 ml per well). After final wash, invert and tap the plate strongly against paper towel.
4. Pipet 100 µl of Biotin Labelled Antibody solution into each well.
5. Incubate the plate at 37°C for 1 hour, without shaking.
6. Wash the wells 3-times with Wash Solution (0.35 ml per well). After final wash, invert and tap the plate strongly against paper towel.
7. Pipet 100 µl of Streptavidin-HRP Conjugate into each well.
8. Incubate the plate at 37°C for 30 minutes, without shaking.
9. Wash the wells 3-times with Wash Solution (0.35 ml per well). After final wash, invert and tap the plate strongly against paper towel.
10. Add 100 µl of Substrate Solution into each well. Avoid exposing the microtiter plate to direct sunlight. Covering the plate with e.g. aluminium foil is recommended.
11. Incubate the plate for 10 minutes at room temperature. The incubation time may be extended [up to 20 minutes] if the reaction temperature is below 20°C. Do not shake the plate during the incubation.
12. Stop the colour development by adding 100 µl of Stop Solution.
13. Determine the absorbance of each well using a microplate reader set to 450 nm, preferably with the reference wavelength set to 630 nm (acceptable range: 550 - 650 nm). Subtract readings at 630 nm (550 - 650 nm) from the readings at 450 nm. **The absorbance should be read within 5 minutes following step 12.**

**Note 1:** If some samples and standard/s have absorbances above the upper limit of your microplate reader, perform a second reading at 405 nm. A new standard curve, constructed using the values measured at 405 nm, is used to determine cyclophilin 40 concentration of off-scale standards and samples. The readings at 405 nm should not replace the readings for samples that were “in range” at 450 nm.

**Note 2:** Manual washing: Aspirate wells and pipet 0.35 ml Wash Solution into each well. Aspirate wells and repeat two times. After final wash, invert and tap the plate strongly against paper towel. Make certain that Wash Solution has been removed entirely.
<table>
<thead>
<tr>
<th></th>
<th>strip 1+2</th>
<th>strip 3+4</th>
<th>strip 5+6</th>
<th>strip 7+8</th>
<th>strip 9+10</th>
<th>strip 11+12</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Standard 6000</td>
<td>Sample 1</td>
<td>Sample 9</td>
<td>Sample 17</td>
<td>Sample 25</td>
<td>Sample 33</td>
</tr>
<tr>
<td>B</td>
<td>Standard 3000</td>
<td>Sample 2</td>
<td>Sample 10</td>
<td>Sample 18</td>
<td>Sample 26</td>
<td>Sample 34</td>
</tr>
<tr>
<td>C</td>
<td>Standard 1500</td>
<td>Sample 3</td>
<td>Sample 11</td>
<td>Sample 19</td>
<td>Sample 27</td>
<td>Sample 35</td>
</tr>
<tr>
<td>D</td>
<td>Standard 750</td>
<td>Sample 4</td>
<td>Sample 12</td>
<td>Sample 20</td>
<td>Sample 28</td>
<td>Sample 36</td>
</tr>
<tr>
<td>E</td>
<td>Standard 375</td>
<td>Sample 5</td>
<td>Sample 13</td>
<td>Sample 21</td>
<td>Sample 29</td>
<td>Sample 37</td>
</tr>
<tr>
<td>F</td>
<td>Standard 188</td>
<td>Sample 6</td>
<td>Sample 14</td>
<td>Sample 22</td>
<td>Sample 30</td>
<td>Sample 38</td>
</tr>
<tr>
<td>G</td>
<td>Standard 94</td>
<td>Sample 7</td>
<td>Sample 15</td>
<td>Sample 23</td>
<td>Sample 31</td>
<td>Sample 39</td>
</tr>
<tr>
<td>H</td>
<td>Blank</td>
<td>Sample 8</td>
<td>Sample 16</td>
<td>Sample 24</td>
<td>Sample 32</td>
<td>Sample 40</td>
</tr>
</tbody>
</table>

*Figure 1: Example of a work sheet.*
Most microplate readers perform automatic calculations of analyte concentration. The Standard curve is constructed by plotting the mean absorbance (Y) of Standards against the known concentration (X) of Standards in logarithmic scale, using the four-parameter algorithm. Results are reported as concentration of prorenin (pg/ml) in samples.

Alternatively, the \textit{logit log} function can be used to linearize the standard curve (i.e. \textit{logit} of the mean absorbance (Y) is plotted against \textit{log} of the known concentration (X) of standards).

The measured concentration of samples calculated from the standard curve must be multiplied by their respective dilution factor, because samples have been diluted prior to the assay, e.g. 500 pg/ml (from standard curve) \times 3 (dilution factor) = 1500 pg/ml

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{human_cyclophilin_40_elisa_standard_curve.png}
\caption{Typical Standard Curve for Human Cyclophilin 40 ELISA.}
\end{figure}
Typical analytical data of BioVendor Human Cyclophilin 40 ELISA are presented in this chapter

**Sensitivity**
Limit of Detection (LOD) (defined as concentration of analyte giving absorbance higher than mean absorbance of blank* plus three standard deviations of the absorbance of blank: $A_{\text{blank}} + 3\times SD_{\text{blank}}$) is calculated from the real cyclophilin 40 values in wells and is 36 pg/ml.

*Dilution Buffer is pipetted into blank wells.

**Limit of assay**
Samples with absorbances exceeding the absorbance of the highest standard should be measured again with higher dilution. The final concentration of samples calculated from the standard curve must be multiplied by the respective dilution factor.

**Presented results are multiplied by respective dilution factor**

**Precision**
Intra-assay (Within-Run) (n=8)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean (pg/ml)</th>
<th>SD (pg/ml)</th>
<th>CV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum 1</td>
<td>3980</td>
<td>53</td>
<td>4.0</td>
</tr>
<tr>
<td>Serum 2</td>
<td>2416</td>
<td>87</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Inter-assay (Run-to-Run) (n=6)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean (pg/ml)</th>
<th>SD (pg/ml)</th>
<th>CV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum 1</td>
<td>1040</td>
<td>29</td>
<td>8.8</td>
</tr>
<tr>
<td>Serum 2</td>
<td>4098</td>
<td>121</td>
<td>8.3</td>
</tr>
</tbody>
</table>
- **Spiking Recovery**  
Samples were spiked with different amounts of human cyclophilin 40 and assayed.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Observed (pg/ml)</th>
<th>Expected (pg/ml)</th>
<th>Recovery O/E (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum 1</td>
<td>1113</td>
<td>2238</td>
<td>110.5</td>
</tr>
<tr>
<td></td>
<td>2559</td>
<td>3363</td>
<td>111.8</td>
</tr>
<tr>
<td></td>
<td>3759</td>
<td>5613</td>
<td>114.3</td>
</tr>
<tr>
<td>Serum 2</td>
<td>1161</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2667</td>
<td>2286</td>
<td>111.5</td>
</tr>
<tr>
<td></td>
<td>3705</td>
<td>3411</td>
<td>108.6</td>
</tr>
<tr>
<td></td>
<td>6312</td>
<td>5661</td>
<td>116.7</td>
</tr>
</tbody>
</table>

- **Linearity**  
Samples were serially diluted with Dilution Buffer and assayed.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Dilution</th>
<th>Observed (pg/ml)</th>
<th>Expected (pg/ml)</th>
<th>Recovery O/E (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum 1</td>
<td>-</td>
<td>3600</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2x</td>
<td>1933</td>
<td>1800</td>
<td>107.4</td>
</tr>
<tr>
<td></td>
<td>4x</td>
<td>882</td>
<td>900</td>
<td>98.0</td>
</tr>
<tr>
<td></td>
<td>8x</td>
<td>463</td>
<td>450</td>
<td>102.8</td>
</tr>
<tr>
<td>Serum 2</td>
<td>-</td>
<td>4228</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2x</td>
<td>2187</td>
<td>2114</td>
<td>103.5</td>
</tr>
<tr>
<td></td>
<td>4x</td>
<td>1010</td>
<td>1057</td>
<td>95.5</td>
</tr>
<tr>
<td></td>
<td>8x</td>
<td>495</td>
<td>528</td>
<td>93.7</td>
</tr>
</tbody>
</table>
14. DEFINITION OF THE STANDARD

Recombinant human cyclophilin 40 is used as the standard. The recombinant human cyclophilin 40 produced in *E.coli* is a 41.9-kDa protein containing 369 amino acid residues of human cyclophilin 40 and 9 extra AA.

15. METHOD COMPARISON

The BioVendor Human Cyclophilin 40 ELISA was not compared to any other commercial immunoassay.

16. TROUBLESHOOTING AND FAQs

» Weak signal in all wells
Possible explanations:
- Omission of a reagent or a step
- Improper preparation or storage of a reagent
- Assay performed before reagents were allowed to come to room temperature
- Improper wavelength when reading absorbance

» High signal and background in all wells
Possible explanations:
- Improper or inadequate washing
- Overdeveloping; incubation time with Substrate Solution should be decreased before addition of Stop Solution
- Incubation temperature over 30°C

» High coefficient of variation (CV)
Possible explanation:
- Improper or inadequate washing
- Improper mixing Standards and samples
17. REFERENCES


For more references on this product see our WebPages at www.biovendor.com
## 18. EXPLANATION OF SYMBOLS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF</td>
<td>Catalogue number</td>
</tr>
<tr>
<td>Cont.</td>
<td>Content</td>
</tr>
<tr>
<td>LOT</td>
<td>Lot number</td>
</tr>
<tr>
<td>!</td>
<td>Attention, see instructions for use</td>
</tr>
<tr>
<td>🦠</td>
<td>Potential biological hazard</td>
</tr>
<tr>
<td>⏰</td>
<td>Expiry date</td>
</tr>
<tr>
<td>📦 8°C</td>
<td>Storage conditions</td>
</tr>
<tr>
<td>🏭</td>
<td>Name and registered office of the manufacturer</td>
</tr>
</tbody>
</table>
Assay Procedure Summary

1. **Antibody Coated Microtiter Plate**
   - Reconstitute Master Standard, prepare set of standards

2. **Add standards and samples 100 µl**
   - Incubate at 37 °C for 2 hours

3. **Add Biotin Labelled Antibody Solution 100 µl**
   - Incubate at 37 °C for 1 hour

4. **Wash 3x**
   - Incubate at 37 °C for 30 min

5. **Add Streptavidin HRP Conjugate 100 µl**
   - Wash 3x

6. **Add Substrate Solution 100 µl**
   - Incubate at RT for 10 min

7. **Add Stop Solution 100 µl**
   - Read absorbance and calculate results
BioVendor – Laboratorní medicína a.s.
Karasek 1767/1, 621 00 Brno, Czech Republic
Phone: +420-549-124-185, Fax: +420-549-211-460
E-mail: info@biovendor.com, sales@biovendor.com
Web: www.biovendor.com

There are BioVendor branches and distributors near you.
To find the office closest to you, visit www.biovendor.com/contact