The OsteoLyse™ Assay Kit provides an easy-to-use protocol for quantitatively measuring \textit{in vitro} osteoclast-mediated bone matrix resorption in a high-throughput homogeneous format. The kit includes a 96-well cell culture plate coated with europium-labeled human collagen, a 96-well fluorescence assay plate and a bottle of Fluorophore Releasing Agent. Osteoclasts can be seeded onto the OsteoLyse™ Plate using traditional cell culture protocols. The assay directly measures the release of europium-labeled collagen fragments into the osteoclast cell culture supernatant via time resolved fluorescence, indicating resorption activity levels.

**Research Applications:**
- Osteoporosis
- Bone resorption
- Osteoclast precursor differentiation
- Mature osteoclast enzyme activity
- Cancer research: metastasis/collagen degradation

**Features:**
- **Homogeneous** – Obtain results in one step by sampling the supernatant (supports high and low throughput applications)
- **Convenient** – Ready-to-use plates with human collagen bound to wells and assay reagents combined in one kit; no antibodies are required
- **Easy to use** – Cells can be seeded onto the surface of the OsteoLyse™ Plate as per traditional cell culture protocols
- **Flexible** – Can be used with cell lines and primary cells
- **Cost Effective** – Much less expensive than existing ELISA kits on the market which do not include a bone or collagen substrate
Human Osteoclast Activity Measured by Collagen Peptide Release Using the OsteoLyse™ Assay Kit

Poietics® Human Osteoclast Precursors were seeded onto an OsteoLyse™ Plate at 10,000 cells/well and differentiated with M-CSF and soluble RANK ligand. At days 7, 8, 9 and 10 of culture, 10 µl of supernatant was removed and counted. The blue bars represent counts obtained when the precursors were cultured with M-CSF only.

Comparison of the TRAP Stain and the OsteoLyse™ Assay Kit in an Assay of Interferon γ-inhibition of Osteoclast Precursor Differentiation

Poietics® Human Osteoclast Precursors were cultured in medium containing soluble RANK ligand +/- interferon γ. After 9 days, cell culture supernatants were assayed for fluorescent collagen peptides as per the OsteoLyse™ Assay Kit instructions. Data are expressed as percent inhibition relative to no interferon controls.

Inhibition of Bone Matrix Resorption by Calcitonin as Assayed in the OsteoLyse™ Assay Kit

Poietics® Human Osteoclast Precursors were seeded onto an OsteoLyse™ Plate at 10,000 cells/well and cultured in differentiation medium containing no calcitonin, calcitonin added only at day 5 and calcitonin added on days 0 and 5. Ten µl samples of supernatants were counted after a total of 6 days. Calcitonin, added at day 0, resulted in the osteoclasts becoming refractory to calcitonin added on day 5.

Ordering Information

OsteoLyse™ Assay Kit

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA-1500</td>
<td>OsteoLyse™ Assay Kit (Human Collagen) Kit includes 96-well plate with collagen, Fluorophore Releasing Reagent, and 96-well assay plate</td>
<td></td>
</tr>
</tbody>
</table>

Related Products – Bone-related Cell Systems (Must be purchased separately)

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2T-110</td>
<td>Osteoclast Precursors</td>
<td>≥1 million cells</td>
</tr>
<tr>
<td>PT-8001</td>
<td>OCP-Osteoclast Precursor BulletKit®</td>
<td>Includes basal medium and supplements for growth and differentiation of primary human osteoclast progenitors</td>
</tr>
</tbody>
</table>

For more information about the OsteoLyse™ Assay Kit, please contact your Lonza Sales Specialist.

Contact Information

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