Clinical Use
- Monitor therapeutic response in patients with metabolic bone disorders
- Predict future bone mineral density (BMD)
- Predict therapeutic response prior to initiation of antiresorptive therapy
- Detect bone metastasis in patients with various malignancies

Reference Range
<table>
<thead>
<tr>
<th></th>
<th>pg/mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men 18-29 y</td>
<td>87-1200</td>
</tr>
<tr>
<td>Men 30-39 y</td>
<td>70-780</td>
</tr>
<tr>
<td>Men 40-49 y</td>
<td>60-700</td>
</tr>
<tr>
<td>Men 50-68 y</td>
<td>87-345</td>
</tr>
<tr>
<td>Women 18-29 y</td>
<td>64-640</td>
</tr>
<tr>
<td>Women 30-39 y</td>
<td>60-650</td>
</tr>
<tr>
<td>Women 40-49 y</td>
<td>40-465</td>
</tr>
</tbody>
</table>

Interpretive Information
- Osteoporosis
- Osteopenia
- Celiac disease
- Paget's disease
- Primary hyperthyroidism
- Rheumatoid arthritis
- Growth hormone deficiency (non-adult onset)
- Therapeutic response (ie, decrease relative to baseline)

Clinical Background
Healthy levels of bone mineral density (BMD) are maintained by a balance between bone resorption and bone formation. C-telopeptide (CTx), a cross-linked peptide of type I collagen, is released during bone resorption and has been correlated with BMD T-scores. CTx correlates inversely with BMD response to therapy and is an early marker or predictor of BMD response. Thus, therapeutic response can be determined within 3 to 6 months of therapy rather than 1 to 2 years. Studies have demonstrated that elevated pretreatment CTx values predict positive response to therapies such as hormone replacement therapy in postmenopausal women. In patients with malignancies, elevated levels of CTx may indicate bone metastases.

Method
- Electrochemiluminescent immunoassay (ECLIA)
- Analytical sensitivity: 30 pg/mL

Specimen Requirements
1 mL frozen serum (no additive red top tube); 0.5 mL minimum
Collect sample between 8 and 10 am after an 8 to 12 hour fast.