SIGMA is pleased to offer –

**NUCLEASE S₁**

(Specifically degrades Single-stranded Nucleic Acids)

N 5255 — from Aspergillus oryzae
Solution in 50% Glycerol
containing NaCl, ZnSO₄ and Sodium Acetate, pH 4.6.

<table>
<thead>
<tr>
<th>Units</th>
<th>Price (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>5.38</td>
</tr>
<tr>
<td>50,000</td>
<td>17.47</td>
</tr>
<tr>
<td>100,000</td>
<td>29.11</td>
</tr>
<tr>
<td>1,000,000</td>
<td>223.95</td>
</tr>
</tbody>
</table>

**ACTIVITY:** 100,000—200,000 units/mg Protein (Lowry).

**UNIT DEFINITION:** One unit will cause 1.0 µg of Nucleic Acid to become Perchloric Acid Soluble per minute at pH 4.6 at 37°C.
(Do not confuse with 30 minute-assay sometimes used by others.)

**NATIVE DNA ACTIVITY:** < 0.1%; substantially free of DNase 1.

**RNase ACTIVITY:** Approx. 250 Kunitz units per mg Protein.


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**SIGMA also offers —**

**RIBONUCLEASE S**
Protease-modified RNase-A

R 6000 — Grade XII-A
From Type XII-A RNase

<table>
<thead>
<tr>
<th>Amount (mg)</th>
<th>Price (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3.36</td>
</tr>
<tr>
<td>25</td>
<td>12.09</td>
</tr>
<tr>
<td>100</td>
<td>33.59</td>
</tr>
<tr>
<td>1 g</td>
<td>219.47</td>
</tr>
</tbody>
</table>

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**RIBONUCLEASE S-PEPTIDE**
From RNase-S
Believed to be a 20-residue peptide. When mixed with “S-Protein”, full enzymic activity is restored.

R 6125 — Grade XII-PE
From Bovine Pancreas

<table>
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<tr>
<th>Amount (mg)</th>
<th>Price (£)</th>
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<tbody>
<tr>
<td>5</td>
<td>10.75</td>
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<tr>
<td>25</td>
<td>35.83</td>
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<tr>
<td>10</td>
<td>17.92</td>
</tr>
<tr>
<td>100</td>
<td>111.98</td>
</tr>
</tbody>
</table>

---

**RIBONUCLEASE S-PROTEIN**
A protein component obtained from RNase S. When mixed with “S-Peptide”, full enzymic activity is restored.

R 6250 — Grade XII-PR
From Bovine Pancreas

<table>
<thead>
<tr>
<th>Amount (mg)</th>
<th>Price (£)</th>
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<tbody>
<tr>
<td>5</td>
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<tr>
<td>10</td>
<td>12.09</td>
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<td>25</td>
<td>24.19</td>
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<tr>
<td>100</td>
<td>67.19</td>
</tr>
<tr>
<td>250</td>
<td>134.37</td>
</tr>
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5-Thio-D-glucose: a potent inhibitor of D-glucose

5-Thio-D-glucose, the analog of D-glucose in which the ring oxygen atom is replaced by sulfur, was first prepared by Feather and Whistler in 1962.\(^1\) It has been shown to interfere effectively with the utilization of D-glucose. When added to the diet, 5-thio-D-glucose completely counteracted the nutritional benefits of D-glucose in *Drosophila melanogaster*, thus inhibiting development of the insect from the larval to the pupal stage.\(^2\)

5-Thio-D-glucose is reportedly a potent, competitive inhibitor of the cellular transport of D-glucose\(^3\) and D-glucose-mediated insulin release.\(^6\) Thus, rats treated intraperitoneally with 5-thio-D-glucose rapidly developed a pseudodiabetic condition with glycosuria and hyperglycemia.\(^7\) This diabeticogenic effect was reversed by the administration of insulin.

The fact that an increase in blood D-glucose caused a decrease in appetite suggests the potential use of 5-thio-D-glucose for weight control.\(^8\)

The LD\(_{50}\) of the compound in mice is 14g/kg of body weight, with 90-95% being excreted unchanged within 6 hours.\(^8\)

Preliminary experiments with mice show that 5-thio-D-glucose prevents D-glucose uptake by testicular cells, thus causing inhibition of spermatogenesis.\(^8\) The compound therefore shows promise as a male contraceptive.

It is also interesting that 5-thio-D-glucose inhibition of D-glucose in tumor cells of mice indicates that the compound is a potential antitumor agent.\(^8\)

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