Product Information

76307 Pefabloc® SC (4-(2-Aminoethyl)benzenesulfonyl fluoride hydrochloride, AEBSF)

CAS number: 30827-99-7

Product Description:

Melting Point: 180-183°C
Molecular Formula: C₈H₁₀NSO₂F x HCl
Molecular Weight: 239.7 g/mol

Storage/Solubility/Stability:
Storage Temperature of the powder is 2-8°C. Avoid contamination of the reagents by microorganisms. Directly soluble in water 200 mg/ml.
Solutions in water are slightly acidic and retain inhibitory activity for up to six months when stored refrigerated. Solutions at pHs above 7 are less stable. Stock solutions should be stored at a pH less than 7. If a final pH of greater than 7 is required, the pH adjustment should be done shortly before use.

Method of Preparation:
Synthetic.

Applications:
Pefabloc SC is an irreversible inhibitor of serine proteases and is readily soluble in water, can be added directly to an aqueous buffer. Serine proteases can destroy the proteins you have isolated and/or purified. In the past, PMSF and DFP were used to eliminate this problem. However, both PMSF and DFP are highly toxic substances (PMSF is a neurotoxin, DFP is a cholinesterase inhibitor), and provide uncertain protection for your protein samples due to their very poor stability and solubility in aqueous solutions. The LD₅₀ determined from oral doses in mice for Pefabloc SC is higher than those for DFP and PMSF. Pefabloc SC has been used in cell culture at concentrations up to 0.25 mM. Our recommended working concentration range is 0.1 mM to 1 mM. Pefabloc SC has been shown to inhibit trypsin, chymotrypsin, plasmin, kallikrein, and thrombin. Inhibition constants for Pefabloc SC are similar to those of PMSF and DFP.
**IC<sub>50</sub> values:** The following table shows IC<sub>50</sub> values for a selection of enzymes determined at pH 7.0, 25°C after 15 minutes incubation time.

<table>
<thead>
<tr>
<th>Enzyme</th>
<th>Enzyme conc.</th>
<th>IC&lt;sub&gt;50&lt;/sub&gt; [mM]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trypsin</td>
<td>0.2 µg/ml</td>
<td>0.081</td>
</tr>
<tr>
<td>Chymotrypsin</td>
<td>2.44 µg/ml</td>
<td>0.044</td>
</tr>
<tr>
<td>Thrombin</td>
<td>0.079, 0.72 µg/ml</td>
<td>0.92</td>
</tr>
<tr>
<td>Factor Xa</td>
<td>0.12 U/ml</td>
<td>24.0</td>
</tr>
<tr>
<td>Plasmin</td>
<td>4 CTA-U/ml</td>
<td>1.99</td>
</tr>
<tr>
<td>tPA</td>
<td>5.0 µg/ml</td>
<td>0.72</td>
</tr>
<tr>
<td>uPA</td>
<td>24.0 µg/ml</td>
<td>0.072</td>
</tr>
<tr>
<td>Glandular kallikrein</td>
<td>3.5 µg/ml</td>
<td>2.86</td>
</tr>
<tr>
<td>Elastase</td>
<td>2.44 µg/ml</td>
<td>0.525</td>
</tr>
<tr>
<td>Subtilisin</td>
<td>0.43 µg/ml</td>
<td>1.801</td>
</tr>
<tr>
<td>Factor XIIa</td>
<td>0.013 µU/ml</td>
<td>0.256</td>
</tr>
</tbody>
</table>

**References**

8. Sigam-Aldrich Quality Control
9. Pentapharm data sheet

**Precautions and Disclaimer:**
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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