

For life science research only.
Not for use in diagnostic procedures.



Protease Inhibitors Set

 **Version: 19**

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Cat. No. 11 206 893 001 1 set
10 individual protease inhibitors

Store the products at +2 to +8°C.

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1. General Information

1.1. Contents

Vial / Bottle	Label	Content
1	Protease Inhibitors Set, Antipain-dihydrochloride	1 vial, 3 mg
2	Protease Inhibitors Set, Bestatin	1 vial, 0.5 mg
3	Protease Inhibitors Set, Chymostatin	1 vial, 1 mg
4	Protease Inhibitors Set, E-64	1 vial, 3 mg
5	Protease Inhibitors Set, Leupeptin	1 vial, 0.5 mg
6	Protease Inhibitors Set, Pepstatin	1 vial, 0.5 mg
7	Protease Inhibitors Set, Phosphoramidon	1 vial, 3 mg
8	Protease Inhibitors Set, Pefabloc® SC (AEBSF)	1 vial, 20 mg
9	Protease Inhibitors Set, EDTA-Na ₂	1 vial, 10 mg
10	Protease Inhibitors Set, Aprotinin	1 vial, 0.5 mg

1.2. Storage and Stability

Storage Conditions (Product)

When stored at +2 to +8°C, the products are stable through the expiry date printed on the label.

Vial / Bottle	Label	Storage
1	Antipain-dihydrochloride	Store dry at +2 to +8°C.
2	Bestatin	⚠ Keep protected from light.
3	Chymostatin	
4	E-64	
5	Leupeptin	
6	Pepstatin	
7	Phosphoramidon	
8	Pefabloc® SC	
9	EDTA-Na ₂	
10	Aprotinin	

Reconstitution

Inhibitor	Solubility	Concentration [mg/ml]	Storage and Stability of Stock Solution
Antipain-dihydrochloride	Water	20	Store stock solution in aliquots for 1 month at –15 to –25°C. ⚠ Avoid repeated freezing and thawing.
	Methanol	–	
	DMSO	–	
Bestatin	1 M HCl	20	Store stock solution in aliquots for 6 months at –15 to –25°C. ⚠ Avoid repeated freezing and thawing.
	Methanol	5	
	0.15 M NaCl	1	
Chymostatin	Glacial acetic acid	20	Store stock solution in aliquots for 1 month at –15 to –25°C. ⚠ Avoid repeated freezing and thawing.
	DMSO	–	
E-64	1:1 water/ethanol (v/v)]	20	⚠ Avoid repeated freezing and thawing.
Leupeptin	Water	1	
Pepstatin	Methanol	1	
Phosphoramidon	Water	20	
Pefabloc® SC	Water	100	
EDTA-Na ₂	Water	to 0.5 M, at pH 8 to 9	
Aprotinin	Water	10	Store stock solution in aliquots for 6 months at –15 to –25°C. ⚠ Avoid repeated freezing and thawing.

1.3. Application

The Protease Inhibitor Set contains ten protease inhibitors. When used in varying combinations, a broad spectrum of proteases can be inhibited. For isolation and purification of proteins, such as enzymes, specific mixtures of inhibitors can be used, for example, a cocktail of:

- Aprotinin
- E-64 or Leupeptin
- EDTA-Na₂
- Pefabloc® SC
- Pepstatin

Alternatively, cOmplete Protease Inhibitor Cocktail Tablets* provide a convenient and reliable solution for the inhibition of a broad spectrum of:

- Serine proteases
- Cysteine proteases
- Metalloproteases
- Calpains

Due to the optimized composition of the tablets, they show excellent inhibition effects and are therefore well suited for the protection of proteins isolated from animal tissue, plants, yeast, and bacteria.

2. How to Use this Product

2.1. Before you Begin

General Considerations

Inhibitor cocktails for protein isolation

For different sources of biological material, specifically adapted protease inhibitor cocktails are valuable for protein isolation.

i The effectiveness of protease inhibition can be verified fast and sensitively with the Universal Protease Substrate, Casein, resorufin-labeled.

Tissue/organism	Inhibitor	Final concentration	Stock medium	Stock concentration
Animal tissues	Pefabloc® SC	1 mg/ml	Water/buffer	40 mg/ml
	EDTA-Na ₂	0.5 mg/ml	Water/buffer	40 mg/ml
	Leupeptin	10 µg/ml	Water/buffer	1 mg/ml
	Pepstatin	10 µg/ml	Methanol	1 mg/ml
	Aprotinin	1 µg/ml	Water/buffer	0.1 mg/ml
Plant tissues	Pefabloc® SC	1 mg/ml	Water/buffer	40 mg/ml
	Chymostatin	20 µg/ml	DMSO	1 mg/ml
	EDTA-Na ₂	0.5 mg/ml	Water/buffer	40 mg/ml
Protozoa	Pefabloc® SC	1 mg/ml	Water/buffer	40 mg/ml
	Leupeptin	10 µg/ml	Water/buffer	1 mg/ml
Slime molds	Pefabloc® SC	1 mg/ml	Water/buffer	40 mg/ml
	Leupeptin	10 µg/ml	Water/buffer	1 mg/ml
	TLCK	0.04 mg/ml	1 mM HCl	20 mg/ml
Yeast and fungi	Pefabloc® SC	1 mg/ml	Water/buffer	40 mg/ml
	Phenanthroline	1 mg/ml	Ethanol	100 mg/ml
	Leupeptin	3 µg/ml	DMSO	1 mg/ml
	Pepstatin	15 µg/ml	Methanol	1 mg/ml
Bacteria	Pefabloc® SC	1 mg/ml	Water/buffer	40 mg/ml
	EDTA-Na ₂	0.5 mg/ml	Water/buffer	40 mg/ml

i If cysteine proteases are thought to cause problems in animal, plant, or protozoa tissues, E-64 should be checked as additive (final concentration: 10 µg/ml; stock solution: 1 mg/ml in water/buffer).

2.2. Parameters

Molecular Weight

Inhibitor	M _r [Da]
Antipain-dihydrochloride	677.6
Bestatin	308.4
Chymostatin	607.7
E-64	357.4
Leupeptin	475.6
Pepstatin	685.9
Phosphoramidon	543.5
Pefabloc® SC	239.5
EDTA-Na ₂	372.24
Aprotinin	6,512

Specificity

Inhibitor	Specificity
Antipain-dihydrochloride	Papain, trypsin
Bestatin	Aminopeptidase, including aminopeptidase B, leucine aminopeptidase, tripeptide aminopeptidase
Chymostatin	α-, β-, γ-, δ-chymotrypsin
E-64	Cysteine proteases
Leupeptin	Serine and cysteine proteases such as plasmin, trypsin, papain, cathepsin B
Pepstatin	Aspartate proteases such as pepsin, renin, cathepsin D, chymosin
Phosphoramidon	Metalloendopeptidases, specifically thermolysine, collagenase, metalloendoproteinases
Pefabloc® SC	Serine proteases such as trypsin, chymotrypsin, plasmin, thrombin
EDTA-Na ₂	Metalloproteases
Aprotinin	Serine proteases

Working Concentration

Inhibitor	Working concentration ⁽¹⁾
Antipain-dihydrochloride	50 µg/ml (74 µM)
Bestatin	40 µg/ml (130 µM)
Chymostatin	6 – 60 µg/ml (10 – 100 µM)
E-64	0.5 – 10 µg/ml (1.4 – 28 µM)
Leupeptin	0.5 – 5 µg/ml (1 – 10 µM)
Pepstatin	0.7 µg/ml (1 µM)
Phosphoramidon	4 – 330 µg/ml (0.007 – 0.6 mM)
Pefabloc® SC	0.1 – 1 mg/ml (0.4 – 4 mM)
EDTA-Na ₂	0.2 – 0.5 mg/ml (0.5 – 1.3 mM)
Aprotinin	0.06 – 2 µg/ml (0.009 – 0.3 µM)

⁽¹⁾ Use these values as a starting point. Final concentrations must be determined empirically for each new system.

3. Supplementary Information

3.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols

 *Information Note: Additional information about the current topic or procedure.*

 **Important Note: Information critical to the success of the current procedure or use of the product.**

① ② ③ etc. Stages in a process that usually occur in the order listed.

① ② ③ etc. Steps in a procedure that must be performed in the order listed.

* (Asterisk) The Asterisk denotes a product available from Roche Diagnostics.

3.2. Changes to previous version

Layout changes
Editorial changes.

3.3. Ordering Information

Product	Pack Size	Cat. No.
Non-finished products		
cOComplete, EDTA free	7500 tablets in glass vial	04 574 834 001
Reagents, kits		
cOComplete	20 tablets in a glass vial, for 50 ml each	11 697 498 001
	3 x 20 tablets in glass vials, for 50 ml each	11 836 145 001
	20 tablets, for 50 ml each	04 693 116 001
cOComplete, Mini	25 tablets in a glass vial, for 10 ml each	11 836 153 001
	30 tablets, for 10 ml each	04 693 124 001
cOComplete, Mini, EDTA-free	25 tablets in a glass vial, for 10 ml each	11 836 170 001
	30 tablets, for 10 ml each	04 693 159 001
cOComplete, EDTA-free	20 tablets, for 50 ml each	04 693 132 001
Universal Protease Substrate	40 mg	11 734 334 001

3. Supplementary Information

3.4. Trademarks

COMPLETE is a trademark of Roche.

All other product names and trademarks are the property of their respective owners.

3.5. License Disclaimer

For patent license limitations for individual products please refer to:

List of biochemical reagent products.

3.6. Regulatory Disclaimer

For life science research only. Not for use in diagnostic procedures.

3.7. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

3.8. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site.**

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

