

cOComplete

Protease Inhibitor Cocktail Tablets provided in *EASYpack*

For the complete inhibition of proteases during extractions from animal and plant tissues or cells, yeast and bacteria

Cat. No. 04 693 116 001

20 tablets

Do not eat

Version 04

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Store at +2 to +8°C

1. What this Product Does

1.1 Properties

cOComplete tablets inhibit a broad spectrum of serine, cysteine and metalloproteases as well as calpains. Due to the optimized composition of the tablets they show excellently inhibition effects and are therefore very well suited for the protection of proteins isolated from animal tissues, plants, yeast and bacteria. cOComplete contains both irreversible and reversible protease inhibitors.

1.2 Contents

20 individually packed cOComplete Protease Inhibitor Cocktail Tablets in foil blisters. Each tablet is sufficient for a volume of 50 ml solution.

1.3 Stability

- The tablets are stable at +2 to +8°C, stored dry, until expiration date.
- The stock solution is stable for 1–2 weeks, stored at +2 to +8°C, or at least for 12 weeks at –15 to –25° C.

1.4 Application

Used for the inhibition of serine, cysteine, and metalloproteases in bacterial, mammalian, yeast, and plant cell extracts.

cOComplete contains both reversible and irreversible protease inhibitors. Therefore, we recommend the addition of cOComplete to all stock buffers and solutions normally protected with protease inhibitors and not only during the initial purification steps.

cOComplete contains EDTA (18.5 mg/tablet yield 1 mM solution of EDTA in 50 ml). Therefore, the extraction buffer should not contain divalent cations like Ca²⁺, Mg²⁺ or Mn²⁺, otherwise the inhibition of the metalloproteases might be incomplete. If the protein of interest will be purified by IMAC (immobilized metal-chelate affinity chromatography), e.g. Poly-His tagged recombinant proteins, EDTA has to be eliminated (e.g. by dialysis) prior to the chromatography.

Alternatively, the product cOComplete, EDTA-free can be used (see table "Ordering Information"). These tablets are identical to cOComplete, with the only difference that no EDTA or other chelating agent are present.

2. How to Use this Product

2.1 Handling

Carefully push the tablet through the foil packaging using the base of your thumb (and not your finger nail) to prevent the breakage of tablets.

Do not eat the tablets.

2.2 Preparation of Working Solutions

One tablet cOComplete is sufficient for the inhibition of the proteolytic activity in 50 ml extraction solution. If very high proteolytic activity is present, one tablet should be used for 25 ml extraction buffer. The tablets can be added directly to the extraction medium. Alternatively a stock solution (25 × conc.) can be prepared.

If it is necessary to inhibit proteolytic activity in a smaller volume we recommend to use cOComplete, Mini (1 tablet for 10 ml extraction solution, see "Ordering Information"). The composition of the cOComplete Mini tablet is identical to the normal cOComplete tablet, therefore comparable results are achieved with both product types.

2.3 Stock solution (25 × conc.)

Dissolve one tablet cOComplete in 2 ml redist. H₂O or in 100 mM phosphate buffer, pH 7.0.

3. Results

In extracts from animal tissues mainly serine, cysteine and metalloproteases are found; in plant extracts serine and cysteine proteases dominate. For bacterial extracts serine and metalloproteases are typical (1). cOComplete tablets inhibit efficiently serine, cysteine and metalloproteases in a broad range.

Occasionally, aspartic proteases ("acid proteases") can interfere upon isolations from animal tissues. These proteases, however, exhibit pronounced activities only at low pH values. If extraction or single isolation steps have to be performed at this pH range the addition of pepstatin* is recommended to inhibit aspartic protease activity as a precaution.

Typical values for the inhibition of different proteases and protease mixtures by cOComplete are shown in table 1.

Protease resp. protease mixture	Enzyme concentration (mg/ml)	pH-value	% inhibition after immediate addition to the protease	% inhibition after 60 min incubation (protease + cOComplete) at +15 to +25° C
Pancreas-extract	0.015	7.8	87%	99%
	0.03	6.5	88%	96%
Pronase	0.0015	7.8	88%	99%
	0.003	7.0	90%	95%
Thermolysin	0.0008	7.8	99%	100%
Chymotrypsin	0.0015	7.8	97%	97%
Trypsin	0.0002	7.8	93%	89%
Papain	1.0	6.5	95%	73%

Table 1: Inhibition of different proteases by cOComplete Protease Inhibitor Tablets.

One cOComplete tablet was added per 50 ml incubation solution. Proteolytic activity was determined with the Roche Diagnostics Universal Protease Substrate (casein, resorufin-labeled*). When extractions or single-step isolations are necessary in the acid pH range, simply include pepstatin* along with cOComplete tablets to ensure aspartic (acid) protease inhibition. All experiments were performed at room temperature.

Personal research communications indicate that acetylcholinesterase is strongly inhibited by cOComplete. Butyrylcholin-esterase is inhibited to a lesser extent.

* available from Roche Diagnostics

4. Additional Information on this Product

4.1 Absorption

A solution of 1 tablet cOComplete dissolved in 50 ml H₂O has an absorption of 0.08 at 280 nm.

4.2 Quality Control

The inhibitory power of cOComplete has been demonstrated with many proteases and protease mixtures. In these experiments drastically higher concentrations of proteases were used compared to the concentration usually present in extracts (see table 1). The inhibitory activity of each lot is tested with a concentrated pancreas extract and a concentrated pronase solution. Thereby, the proteolytic activities are typically inhibited by 95% after one hour (detection with universal protease substrate casein, resorufin-labeled*).

4.3 Reference

- 1 North, M.J. (1969) in: Proteolytic Enzymes - A Practical Approach (Beynon, P.J. & Bond, J.S. eds.), IRL press Oxford, pp. 117-119.

5. Supplementary Information

5.1 Ordering Information

Roche Diagnostics offers a large selection of reagents and systems for life science research. For a complete overview of related products and manuals, please visit and bookmark our homepage www.lifescience.roche.com.

cOComplete Protease Inhibitor Cocktail Tablets in *EASYpacks*:

Product	Pack size	Cat. No.
cOComplete	20 tablets in foil blisters (for 50 ml each)	04 693 116 001
cOComplete, Mini	30 tablets in foil blisters (for 10 ml each)	04 693 124 001
cOComplete, EDTA-free	20 tablets in foil blisters (for 50 ml each)	04 693 132 001
cOComplete, Mini, EDTA-free	30 tablets in foil blisters (for 10 ml each)	04 693 159 001

cOComplete Protease Inhibitor Cocktail Tablets in glass vials:

Product	Pack size	Cat. No.
cOComplete	20 tablets in a glass vial (for 50 ml each)	11 697 498 001
	3 × 20 tablets in a glass vial (for 50 ml each)	11 836 145 001
cOComplete, Mini	25 tablets in a glass vial (for 10 ml each)	11 836 153 001
cOComplete, EDTA-free	20 tablets in a glass vial (for 50 ml each)	11 873 580 001
	3 × 20 tablets in a glass vial (for 50 ml each)	05 056 489 001
cOComplete, Mini, EDTA-free	25 tablets in a glass vial (for 10 ml each)	11 836 170 001

cOComplete ULTRA Protease Inhibitor Cocktail Tablets:

Product	Pack size	Cat. No.
cOComplete ULTRA, Mini, EDTA-free, <i>EASYpack</i>	30 tablets in foil blisters (for 10 ml each)	05 892 791 001
cOComplete ULTRA, EDTA-free, glass vials	2 × 10 tablets in glass vials (for 50 ml each)	05 892 953 001
	6 × 10 tablets in glass vials (for 50 ml each)	06 538 282 001
cOComplete ULTRA, Mini, with EDTA, <i>EASYpack</i>	30 tablets in foil blisters (for 10 ml each)	05 892 970 001
cOComplete ULTRA, with EDTA, glass vials	2 × 10 tablets in glass vials (for 50 ml each)	05 892 988 001
	6 × 10 tablets in glass vials (for 50 ml each)	06 538 304 001

PhosSTOP Phosphatase Inhibitor Cocktail Tablets:

Product	Pack size	Cat. No.
PhosSTOP	10 tablets in foil blisters (for 10 ml each)	04 906 845 001
PhosSTOP	20 tablets in foil blisters (for 10 ml each)	04 906 837 001

cOComplete His-Tag Purification:

Product	Pack size	Cat. No.
cOComplete His-Tag	25 ml settled resin volume	05 893 682 001
Purification Resin	200 ml settled resin volume	05 893 801 001

5.2 Changes to Previous Version

- Editorial changes
- Ordering Information updated

5.3 Trademarks

COMPLETE and PHOSSTOP are trademarks of Roche.

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5.4 Regulatory Disclaimer

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

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