Protease Inhibitor Cocktails – Summary and Applications

Art. No.	3743	3749	3751	3755	3758	3760
Inhibitor Cocktail	**Standard**	**BroadRange**	**Plus**	**Tissue**	**Bacteria**	**His-tag**
Sipment	lyophilisiert (uncooled)	lyophilisiert (uncooled)	in 1 ml DMSO (cooled)	lyophilisiert (uncooled)	lyophilisiert (uncooled)	in 1 ml DMSO (cooled)
Dilute in	100 ml H_2O dist.	1 ml H_2O dist.	-	1 ml H_2O dist.	1 ml DMSO + 4 ml H_2O dist.	-
Stock Solution	-*	ca. 100x	for 20 g	ca. 100x (for 2 g)	ca. 40x (for 20 g *E. coli*)	ca. 100x (for 10 g)
Inhibitor conc. in	1 x solution	1 ml stock solution	1 ml stock solution	1 ml stock solution	5 ml stock solution	1 ml stock solution
AEBSF	1.67 mM	50 mM	100 mM	50 mM	20 mM	100 mM
Aprotinin	-	15 µM	80 µM	15 µM	-	-
Bestatin	-	-	5 mM	-	1.7 mM	5 mM
E-64	-	100 µM	1.5 mM	100 µM	200 µM	1.5 mM
EDTA	13.44 mM	50 mM	-	-	85 mM	-
Leupeptin	2.1 µM	100 µM	2 mM	100 µM	-	0.2 mM
Pepstatin A	1.46 µM	-	1 mM	-	2 mM	-
Phosphor-amidon	-	-	-	-	-	2 mM

* Due to solubility and high inhibitor concentrations in this cocktail, stock solutions of Inhibitor Cocktail Standard are hard to prepare. A 10x stock solution may be prepared by solubilisation in 10 ml H_2O, it is, however, not recommended.

Summary of effectiveness of protease inhibitors used for cocktails

Protease Inhibitor	AEBSF	Aprotinin	Bestatin	E-64	EDTA	Leupeptin	Pepstatin A	Phorsphor-amidon
Target Molecules								
Serine Proteases	irreversible	competitive, reversible	-	-	-	competitive	-	-
Cathepsin A						no inhib.		
Chymotrypsin	+	+				no inhib.		
Elastase	o	o				o		
Kallikrein	+	+				+		
Plasmin	+	+				+		
Thrombin	+	o				(+)		
Trypsin	+	+		weak		+		
Trypsin-like Proteases	+	+				+		
Amino Peptidases	-	-	competitive	-	-	-	-	-
Aminopeptidase A			no inhib.					
Amonipeptidase B			+					
Leucin-Amonipeptidases			+					
Triaminopeptidases			+					
Cystein Proteases	-	-	-	irreversible	-	competitive	-	-
Calpain				+		+		
Papain				+		+		
Cathepsin B				+		+		
Metalloproteases	-	-	-	-	irreversible	-	-	effective
Thermolysin					+			+++
Collagenase					+			(+)
Enkephalinase					+			+
Aspartyl Proteases	-	-	-	-	-	-	effective	-
Pepsin							+	
Renin							+	
Chymosin							+	
Retroviral Protease							+	
Cathepsin D							+	
Esterases	-	effective	-	-	-	-	-	-
Nukleases	-	-	-	-	irreversible	-	-	-

+: effective (+): weakly effective - : not effective o: unknown

Carl Roth GmbH + Co. KG
Schoemperlenstraße 3-5
76185 Karlsruhe
Postfach 100121
76231 Karlsruhe
Telefon: +49 (0) 721/ 5606-0
Telefax: +49 (0) 721/ 5606-149
E-Mail: info@carlroth.com
Internet: www.carlroth.com
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