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Technical Info

Protease Inhibitor Cocktails – Overview and Recommended Applications

Art. No.	3743	3749	3751	3755	3758	3760
Inhibitor Cocktail	Standard	BroadRange	Plus	Tissue	Bacteria	His-tag
Sipment	lyophilisiert (un-cooled)	lyophilisiert (uncooled)	in 1 ml DMSO (cooled)	Lyophilisiert (uncooled)	lyophilisiert (uncooled)	in 1 ml DMSO (cooled)
Dilute in	100 ml H ₂ O dist.	1 ml H ₂ O dist.	-	1 ml H ₂ O dist.	1 ml DMSO + 4 ml H ₂ O dist.	-
Stock Solution	-*	ca. 100x	for 20 g	ca. 100x (for 2 g)	ca. 40x (for 20 g <i>E. coli</i>)	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	2.4 µM	100 µM	2 mM	100 µM	-	-
Pepstatin A	1.46 µM	-	1 mM	-	2 mM	0.2 mM
Phosphoramidon	-	-	-	-	-	2 mM
Recommended for	Extrakt without special proteases, basic sol. for own inhibitors	Broad band effects. Extracts from eukaryotic tissue	Broad band effects. Extracts from mammalian cells and tissue	Extracts from mammalian cells and tissue	Bacterial extracts	Extractions of His-tagged proteins

* 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 H₂O, it is, however, not recommended.

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Summary of effectiveness of protease inhibitors used for cocktails

Protease Inhibitor	AEBSF	Aprotinin	Bestatin	E-64	EDTA	Leupeptin	Pepstatin A	Phosphoramidon
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.					
Aminopeptidase B			+					
Leucin-Aminopeptidases			+					
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	-	-	-	-	-	-
Nucleases	-	-	-	-	irreversible	-	-	-

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

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