



DSM Pentapharm Reagents for coagulation diagnostics

- Peptide substrates
- Biochemicals
- Inhibitors
- Snake venom enzymes
- Haemostasis kits

Peptides Substrates

DSM has developed assay methods to test for serine proteinase activity in research, in-process control and quality control. Pefachrome® and Pefafleur® are trademarks for a series of chromogenic and fluorogenic substrates from DSM. The activity of proteinases can be quickly and accurately determined and monitored by use of these peptide substrates.

Pefachrome®

Specific synthetic chromogenic peptide substrates for the measurement of the activity of various serine proteases in the field of:

- Coagulation
- Fibrinolysis
- Kallikein-kinin system
- Complement system

The chromogenic peptides are also used in quality control of pharmaceutical and other preparations.

Packaging: 25 mg, 1 g, 5 g (further packaging on request)



Product	Formula	Properties	Article No.
Substrate for Thrombin			
Pefachrome® TH 5244	Tos-Gly-Pro-Arg-pNA · AcOH	n.a.	081-01
Pefachrome® TH 5247	H-D-CHG-But-Arg-pNA · 2AcOH	n.a.	081-05
Pefachrome® TH 5251	H-D-CHA-Ala-Arg-pNA · 2AcOH	n.a.	081-09
Pefachrome® FXIIa/TH 5253	H-D-CHA-Gly-Arg-pNA · 2AcOH	n.a.	081-11
Pefachrome® TH 5256	CH ₃ OCO-Gly-Pro-Arg-pNA · AcOH	n.a.	081-15
Pefachrome® TH 8198	H-D-Phe-Pip-Arg-pNA · 2HCl	Km (human Thrombin) 7 µM	081-66
(corresp. S-2238)		Km (bovine Thrombin) 9 µM	
Substrate for the determination of Thrombin generation			
Pefachrome® TG	H-β-Ala-Gly-Arg-pNA · 2AcOH	Km 1.95 mM kcat 1.91 s ⁻¹	081-17
Substrate for Urokinase			
Pefachrome® uPA 8294	pyro-Glu-Gly-Arg-pNA · HCl	Km 6 µM	082-33
(corresp. S-2444)		V _{max} 1.3 10 ⁻¹⁰ mol/min	
Substrate for Plasmin			
Pefachrome® PL/Tryp 5261	Tos-Gly-Pro-Lys-pNA · AcOH	n.a.	083-01
Pefachrome® PL 5262	H-D-But-CHA-Lys-pNA · 2AcOH	n.a.	083-02
Pefachrome® PL 5263	H-D-Nva-CHA-Lys-pNA · 2AcOH	n.a.	083-03
Pefachrome® PL 5264	H-D-Nle-CHA-Lys-pNA · 2AcOH	n.a.	083-04
Substrate for Trypsin			
Pefachrome® TRY 5274	Cbo-Val-Gly-Arg-pNA · AcOH	n.a.	084-01
Pefachrome® PL/Tryp 5261	Tos-Gly-Pro-Lys-pNA · AcOH	n.a.	083-01
Substrate for the determination of bacteria endotoxins			
Pefachrome® LAL 5288	CH ₃ OCO-D-CHA-Gly-Arg-pNA · AcOH	n.a.	086-11

Product	Formula	Properties	Article No.
Substrate for C1-esterase			
Pefachrome® C1E 5603	CH ₃ CO-Lys(Cbo)-Gly-Arg-pNA · AcOH	n.a.	087-03
Substrate for activated Protein C			
Pefachrome® PCa	H-D-Lys(Cbo)-Pro-Arg-pNA · 2AcOH	Km 0.303 mM	089-02
		Vmax 25 µmol/ml Protein C/min	
Substrate for tPA			
Pefachrome® tPA	CH ₃ SO ₂ -D-CHA-Gly-Arg-pNA · AcOH	Km sc-tPA 0.286 mM	091-01
		Km tc-tPA 0.167 mM	
		Vmax sc-tPA 6.95 nmol/µg tPA/min	
		Vmax tc-tPA 33.9 nmol/µg tPA/min	
Pefachrome® tPA 5312	CH ₃ SO ₂ -D-Phe-Gly-Arg-pNA · AcOH	n.a.	091-03
Substrate for Factor VIIa			
Pefachrome® FVIIa	CH ₃ SO ₂ -D-CHA-But-Arg-pNA · AcOH	n.a.	093-01
Substrate for Factor IXa			
Pefachrome® FIXa	CH ₃ SO ₂ -D-CHG-Gly-Arg-pNA · AcOH	n.a.	095-20
Substrate for Factor Xa			
Pefachrome® FXa 5277	CH ₃ SO ₂ -D-Leu-Gly-Arg-pNA · AcOH	n.a.	085-01
Pefachrome® FXa 5279	CH ₃ OCO-D-CHG-Gly-Arg-pNA · AcOH	n.a.	085-03
Pefachrome® FXa 8595	Z-D-Arg-Gly-Arg-pNA · 2HCl	Km 0.1 mol/l	085-27
(corresp. S-2765)		kcat 290 s ⁻¹	
Pefachrome® FXa 2732	Suc-Ile-Glu (gamma-Pip)-Gly-Arg-pNA · HCl	n.a.	802050
(corresp. S-2732)			
Pefachrome® FXa/LAL 5288	CH ₃ OCO-D-CHA-Gly-Arg-pNA · AcOH	n.a.	085-06
Substrate for Factor XIIa			
Pefachrome® 6017	H-D-CHA-Gly-Arg-pNA · 2AcOH	Km 0.8 mM	081-45
		Vmax 3.14 µmol/min	
Pefachrome® FXIIa/TH 5253	H-D-CHA-Gly-Arg-pNA · 2AcOH	n.a.	081-11

Pefafluor®

Fluorogenic peptide substrates for use in research, in-process and quality control.

The fluorogenic group is AMC, 7-Amino-4-methylcoumarin. The optical characteristics of AMC are:

- Absorption maximum wavelength of approx. 342 nm
- Emission maximum wavelength of approx. 440 nm

Product	Formula	Packaging	Article No.
Substrate for Thrombin			
Pefafluor® TH	Z-Gly-Gly-Arg-AMC · HCl	Vial 25 mg/ bulk	801058

*additional fluorogenic peptides on request

Biochemicals

DSM manufactures selected standardized biochemical products for:

- Research
- Production
- In-process control
- Quality control
- Analytical applications
- Purification processes



Prionex®

Prionex® is a porcine collagen peptide fraction and has multiple advantages:

- Optimizes stability of biological activity
- Improves conditions for lyophilisation and heat treatment
- Does not contain bovine-derived materials
- Avoids denaturation by chaotropic agents or solvents
- Extends shelf life for enzymes and proteins
- Additive-free
- High consistency stabilizer

Product	Packaging	Article No.
Prionex® 10%	Bottles 100 ml, 500 ml, 1000 ml	069-03

Rabbit brain cephalin

Rabbit brain cephalin consists of phospholipids isolated from rabbit brain. It can be used as a phospholipid source in phospholipid dependent coagulation assays. The main components are:

- Phosphatidylserine
- Phosphatidylethanolamine
- Phosphatidylethanolcholine

Product	Packaging	Article No.
Rabbit Brain Cephalin, freeze dried	Vial 100 mg	801682

Inhibitors

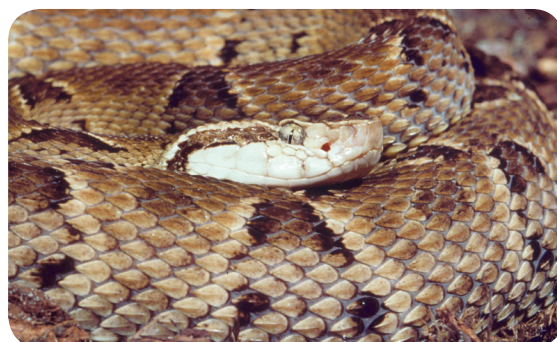
DSM offers a series of protease inhibitors. The inhibitors are applied to protect specific proteins from proteolytic degradation or to remove undesired proteolytic activity and subsequently increase specificity of proteases or of chromogenic substrate assays.

Product	Formula	Packaging	Article No.
Inhibits serine proteases			
Aprotinin Conc. Solution	n.a.	Vial 50 ml	073-70
Aprotinin Powder, lyoph.	n.a.	Vial 1 g	800277
Pefabloc® SC	n.a.	Vial 1 g and 10 g	399-01
Inhibits fibrin polymerization			
Pefabloc® FG	H-Gly-Pro-Arg-Pro-OH · AcOH	Bulk	099-01
Inhibits Thrombin			
Pefabloc® TH (α-NAPAP)	n.a.	Vial 5 mg	381-01
r-Hirudin EC	n.a.	Vial 2000 ATU	126-10

Snake venom enzymes

DSM manufactures highly purified snake venom components, which either activate or inactivate specific components of the plasma coagulation or fibrinolysis system, or show a specific interaction with such components. Isolated snake venom proteins can be used in coagulation and platelet aggregation tests, in photometric assays as well as in immunological systems for:

- Research
- Diagnostic purpose
- Analytical applications
- Quality control



For the determination of fibrinogen

Product	Packaging	Article No.
Batroxobin maranhao	Vial 100 BU	101-04
Batroxobin maranhao	Vial 1'000 BU	101-06

Fast acting protein C activator

Product	Packaging	Article No.
Protac®	Vial 3 U	113-01
Protac® solution	Bulk 10 U/ml	113-05

For the determination of prothrombin and hirudin, specifically activates prothrombin via meizothrombine

Product	Packaging	Article No.
Ecarin	Vial 50 EU	116-01

For activation of human platelets via GPVI-receptor, studies on platelets receptors

Product	Packaging	Article No.
Convulxin	Vial 50 µg	119-02

For activation and determination of Factor V

Product	Packaging	Article No.
RVV-Factor V Activator	Vial 1'000 U	121-03

For the determination of Factor X and for screening of Lupus Anticoagulants

Product	Packaging	Article No.
RVV Factor X Activator	Vial 5 U	121-06
RVV Factor X Activator	Vial 50 U	121-07



Kits and Reagents

DSM develops and manufactures reagents and test systems for coagulation and fibrinolysis

Pefakit® APC-R Factor V Leiden is a plasma based functional assay for the determination of resistance of Factor Va to inactivation by activated protein C (APC) caused by the factor V Leiden mutation.

CE/FDA 510 (k)

Control plasmas for confirmation of Factor V Leiden mutation (FV:Q) in assays for determination of the functional phenotype for activated protein C resistance caused by the factor V Leiden mutation.

CE/FDA 510 (k)

Product	Pack	Article No.
Pefakit® APC-R Factor V Leiden 3 x 40 tests	3 x 2 ml APC/RVV-V (+APC) Reagent	502-01; for US 502-02
	3 x 2 ml RVV-V (-APC) Reagent	
	3 x 4 ml PTA Reagent	
	3 x 2 ml Dilution Plasma	
Pefakit® APC-R Factor V Leiden Controls	3 x 1 ml FV-L Negative Control	502-21; for US 502-22
	3 x 1 ml FV-L Heterozygous Control	

Pefakit® PiCT® is a plasma based functional assay for the determination of Factor Xa and factor IIa inhibitors.

CE/US and CA for research use only

Product	Pack	Article No.
Pefakit® PiCT®	3 x 2 ml PiCT® Activator	505-01
	3 x 2 ml PiCT® Start Reagent	
Pefakit® PiCT® Controls UFH	3 x 1 ml UFH Control 1	505-22
	3 x 1 ml UFH Control 2	

For the investigation of the last phase of blood coagulation. Due to its heparin insensitivity, the Reptilase®Time can detect fibrinogen polymerization disorders even in the presence of heparin.

CE/US and CA for research use only

Product	Pack	Article No.
Pefakit® Reptilase® Time	3 x 1 ml Reptilase®Time Reagent	800191

Pefakit® TAFI is a plasma based chromogenic assay for determination of Thrombin Activatable Fibrinolysis Inhibitor (TAFI) activity.

For research use only

Product	Pack	Article No.
Pefakit® TAFI	2 x 4 ml Activator	800186
	2 x 4 ml Start Reagent	
	2 x 4 ml Diluent	
Pefakit® TAFI Controls and Calibration	1 x 1 ml Calibrator	800187
	1 x 1 ml Control 1	
	1 x 1 ml Control 2	

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