

**Table 4: Results and validation of drug effects on haemostasis in perfusion assays**

Drug	Bleeding Time	In Vitro, Ex Vivo	Surface	Shear Rate (sec/1)	Annular Perfusion Chamber			Parallel-Plate Perfusion Chamber					
					Platelet Adhesion	Fibrin Formed	Thrombi	Platelet Adhesion	Fibrin Formed	Thrombi			
<b>Anti-platelet agents</b>													
ASA	Prolonged	In vitro [135]	Rabbit SE	800	Increased		++	Increased	-	-			
		In vitro [135]	Rabbit SE	2,600							Increased	++	
		Ex vivo [135]	Rabbit SE	800	-	-	-				-	-	-
		Ex vivo [135]	Rabbit SE	2,600	-	-	+						
		Ex vivo [136]	Collagen	650	Increased	-	-				-	-	-
		Ex vivo [136]	Collagen	2,600									
Ex vivo [114]	Collagen	2,600/stenosis	-	-	-	-	-	-					
Ex vivo [114]	Collagen	10,500/stenosis							+				
Ex vivo [137]	TF/phospholip.	2,600	++	-	-								
Dipyridamole	Prolonged	In vitro [135]	Rabbit SE	800	-	-	-						
		In vitro [135]	Rabbit SE	2,600	-	-	-						
		Ex vivo [135]	Rabbit SE	800	-	-	-						
Ticlopidine	Prolonged	Ex vivo [137]	Collagen	2,600				-	+	+			
		Ex vivo [137]	TF/phospholip.	2,600				-	-	-			
Clopidogrel	Prolonged	Ex vivo [138]	Collagen	100				Increased	++	++			
		Ex vivo [138]	Collagen	650				Increased	++	++			
		Ex vivo [138]	Collagen	2,600				Increased	++	++			
TXA2 inhibitor Linotroban		Ex vivo [139]	Collagen	650				Increased	-	+/-			
		Ex vivo [139]	Collagen	2,600				Increased	-	+			
Prostacyclin I2	Prolonged	In vitro [140]	Rabbit SE	2,600	+		++						
GPIIb-IIIa inh.													
Reopro	Prolonged	No data	No data										
RGDS	Prolonged	In vitro [130]	Rabbit SE	2,600	++		++	++					
		In vitro [141]	Collagen	2,600				+/-	-	-			
		Ex vivo [142]	h-ECM	100				++	+++	++			
Ro 44-9883		Ex vivo [143]	Collagen	65				-	Increased	++			
γFIB 400-411		In vitro [144]	Collagen	200				-					
		In vitro [144]	Collagen	2,600				+					
		In vitro [141]	Collagen	2,600				+					
		In vitro [130]	Rabbit SE	2,600	+		+						
<b>Vit. K-inhibitor</b>													
Fluindione	-	Ex vivo [145]	Collagen	2,600					-	-			
		Ex vivo [145]	TF/phospholip.	2,600					++	++			
Warfarin		Ex vivo [146]	Collagen	650				-	-	-			
		Ex vivo [146]	Collagen	2600				-	-	-			
		Ex vivo [146]	Collagen	10,500/stenosis				-	+	-			
Phenprocoumon		Ex vivo [147]	Rabbit SE	50	++		++						
		Ex vivo [147]	Rabbit SE	650	++		++						
<b>Heparins</b>													
Unfractionated Heparin	-	Ex vivo [57]	H-endothelium	50					+				
		Ex vivo [148]	H-endothelium	65					++				
		Ex vivo [59]	H-endothelium	2,600					++	+/-			
		Ex vivo [59]	TF/phospholip.	2,600					-	-			
		Ex vivo [149]	Collagen	50	-	++	+						
		Ex vivo [149]	Collagen	650	-	++	+						
Ex vivo [149]	Collagen	2,600	-	-	-								
Low molecular weight heparin	-	Ex vivo [57]	H-endothelium	50					+				
Protaminesulphate		Ex vivo [150]	Collagen	650				++	-	+++			
		Ex vivo [150]	Collagen	2,600				++	-	+++			
<b>Thrombin inhibitor</b>													
Hirudin	-	Ex vivo [151]	TF/phospholip.	2,600					++	++			
		Ex vivo [148]	H-endothelium	65					+++				
<b>Combinations</b>													
ASA + ticlopidine	Prolonged	Ex vivo [137]	Collagen	2,600					+++	+++			
		Ex vivo [137]	TF/phospholip.	2,600					-	-			
ASA + clopidogrel	Prolonged	Ex vivo [152]	Collagen	2,600					+++	+++			

ASA + fluidione	Prolonged	Ex vivo [153]	Collagen	2,600					++	+
		Ex vivo [153]	TF/phospholip.	2,600					+++	+++
ASA + dipyridamole	Prolonged	Ex vivo [154]	Collagen	2,600					+	+
<b>TF and VII inhibitors</b>										
Anti-tissue factor Moab		Ex vivo [155]	H-monocytes	650					+++	+++
RFVIIa-inhibitor		Ex vivo [156]	TF/phospholip.	100				++	++	++
		Ex vivo [156]	TF/phospholip.	650				+++	+++	+++
		Ex vivo [157]	TF/phospholip.	65					-	-
		Ex vivo [157]	Collagen H-endothelium	65					+++	+++
r-Tissue factor pathway inhibitor (+ FXa)		Ex vivo [158]	h-ECM	100					+++	
		Ex vivo [142]	h-ECM	100				+++	+++	+++
		Ex vivo [142]	h-ECM	650				+++	+++	+++
<b>Prothrombotic drugs</b>										
r-FVII (+FX and prothrombin)	Glanzmann (GPIIb/IIIa def) BT not measured	In vitro [159]	h-ECM	1,600				Increased		Increased
Erythropoietin	Shortenes in case uremic trombopathy and anemia	In vitro [125]	Collagen	1,300				-		Increased
		In vitro [125]	Matrix of human endothelium	1,300				Increased		Increased
VWF	Normalizes in vWD-I /III	In vitro [160-164]	Human/Rabbit SE	800	Increased		Increased			
		In vitro [163]	Human SE	1.800	Increased		Increased			
DDAVP	Shortenes in vWD-I	In vitro [61]	Human SE	2,500	Increased		Increased			
		In vitro [61]	Human SE	2,500	-		-			
	No effect in vWD lia/ b	In vitro [61]	Human SE	2,500	-		-			
<b>Div. drugs and chemical entities</b>										
TAP: FXa inhibitors		Ex vivo [165]	Collagen	650				-		+
		Ex vivo [165]	Collagen	2,600				-		-
		Ex vivo [165]	TF/phospholip.	650				+++	+++	+++
		Ex vivo [165]	TF/phospholip.	2,600				+++	+++	+++
FIXa Inhibitor		Ex vivo [157]	Collagen						+++	-
		Ex vivo [157]	H-endothelium						-/+	+
omega-3 fatty acids Triomar®		Ex vivo [166]	Collagen	650				-	-	-
		Ex vivo [166]	Collagen	2,600				-	-	-
		Ex vivo [166]	Collagen	10,500/stenosis				-	+	-
Insulin		In vitro [133]	Collagen	1000				+		
estradiol/ desogestrel		Ex vivo [131]	Rabbit SE	650	-	+	-			
iohexol (Angiographic contrast)		Ex vivo [168-169]	Collagen	2,600				-		-
		Ex vivo [168-169]	TF/phospholip.	2,600				-	-	-
iodixanol (Angiographic contrast)		Ex vivo [168-169]	Collagen	2,600				-		-
		Ex vivo [168-169]	TF/phospholip.	2,600				-	-	-
ioxaglic acid (Angiographic contrast)		Ex vivo [168-169]	Collagen	2,600				-		-
		Ex vivo [168-169]	TF/phospholip.	2,600				-	-	-
r-Annexin V		Ex vivo [170]	h-ECM	100				+++	+	-
		Ex vivo [170]	h-ECM	650				-/+	-	-
retinoic acid		Ex vivo [117]	H-monocytes	650					+++	+
cigarette smoke		Ex vivo [136]	Collagen	650				-	-	-
		Ex vivo [136]	Collagen	2,600				-	-	Increased

- = No significant effect -+ borderline statistical decrease, +/ ++/ +++ graded decrease, TF/phosph = tissue factor/phospholipids, r- = recombinant H-endothelium = human endothelium, H- ECM = human endothelium extracellular matrix, H-FbM = human fibroblast extracellular matrix, H-monocytes = human-monocytes SE = Subendothelium, H-ECM = human endothelial cell matrix, VWF = von Willebrand factor, Moab = monoclonal antibody, ASA = acetyl salicylic acid