

Supplementary Table 1. Haemocompatibility of coatings.

Coating	<i>In vitro</i> haemocompatibility	<i>In vivo</i> haemocompatibility
DLC	Reduced platelet adhesion ⁴⁶ and haemolysis ²² ; acceptably low haemolysis ⁴⁴	Low haemolysis and no thrombus formation ^{5,18,22} ; confirmed safety profile of VentrAssist™ patients ¹⁶
Amorphous carbon	Acceptable haemolysis ¹⁹	
BMF		No thrombus on BMF coated bearing surfaces ⁸ and rotating rear touch point ²⁰
TiN	Acceptable haemolysis induced by the material and extract ²³ ; did not cause erythrocytes damage and platelets adhesion ²¹	
PEO	Similar haemocompatibility to uncoated Ti in platelet adhesion and plasmatic coagulation ²⁵	
MPC	Decreased platelet deposition, bulk phase platelet activation, ^{27,47} fibrinogen adsorption ⁴⁷ and haemolysis ⁵⁰	Low haemolysis and no thrombus formation ^{5,18,48-52} ; no thrombus formation running for 34 days without anticoagulant therapy ¹⁸ ; lower platelet activation than DLC coating ¹⁷

Supplementary Table 1. (Continued)

Coating	<i>In vitro</i> haemocompatibility	<i>In vivo</i> haemocompatibility
Heparin	Stronger antithrombogenicity in terms of platelet and fibrin adherence ⁶	Feasible to use heparin coated pumps without systemic heparinization ^{30,34,35,37} ; Berlin Incor (CARMEDA [®] heparin coating) allowed long-term haemolysis-free support ³¹ ; heparin-coated surfaces alone failed to prevent thrombus ³⁶ ; clots could form on the CARMEDA [®] surface even if a low dosage of heparin was used ³²
Glycoprotein IIb/IIIa receptor inhibitor	Reduced platelet adhesion, no significant difference on fibrinogen adsorption ³⁸	
Silicone	Reduced haemolysis, no thrombus formation and fibrin deposition ⁵⁴	Low haemolysis and no thrombus formation ⁵⁴
Polyurethane		No clots formation ⁵⁵
Ti, Ti6Al7Nb	Low haemolysis and no thrombus formation ⁵⁶	

Supplementary Table 1. (Continued)

Coating	<i>In vitro</i> haemocompatibility	<i>In vivo</i> haemocompatibility
Apatite, apatite- albumin, apatite- laminin	Reduced platelet adhesion ⁵⁷	
Sintered Ti microspheres		Low haemolysis ^{39,58,59} and no thrombus formation ³⁹ in animal studies; low thromboembolic risk in clinical studies ⁴⁰
Endothelial cells	Reduced platelet adhesion ⁴¹⁻⁴³	

Note: DLC: diamond-like carbon, BMF: BioMedFlex, TiN: titanium nitride, UNCD: ultrananocrystalline diamond, PEO: plasma electrolytic oxidation, MPC: 2-methacryloyloxyethyl phosphorylcholine.