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Pre-validation of a MALDI MS proteomics-based method for the reliable detection of blood and blood provenance

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Tables

Intravenous BOVINE blood -peptide <i>m/z</i>	Mass accuracy (ppm)	Blind sample 38 (BOVINE) - peptide <i>m/z</i>	Mass accuracy (ppm)
αHB 1071.554	0.6	---	
αHB 1529.734	0.4	---	
αHB 1833.892	-0.4	---	
βHB 1265.828	-2.2	---	
βHB 1274.723	-1.9	βHB 1274.706	15
βHB 1422.716	-7.6	---	
βHB 1477.801	-0.7	---	
βHB 1752.898	-0.6	---	
βHB 1868.951	-1.6	---	
		GAPDH 795.418	-3.0
		GAPDH 805.432	1.1
		GAPDH 1032.595	-6.6
		GAPDH 1358.681	-9.5
		GAPDH 1369.743	-5.5
		GAPDH 1369.743	-5.5
GAPDH 1499.776	-8.2		
		GAPDH 1499.789	-7.2
		GAPDH 1615.880	2.5
		GAPDH 1763.802	2.5
		myoglobin 629.343	3.9
		myoglobin 748.433	-3.2
		myoglobin 1271.668	3.8
		myoglobin 1393.821	3.8
		myoglobin 1592.838	-0.7

		myoglobin 1669.834	-1.3
Intravenous PORCINE blood -peptide <i>m/z</i>	Mass accuracy (ppm)	Blind sample 7 (PORCINE) - peptide <i>m/z</i>	Mass accuracy (ppm)
αHB 1041.540	-3.6	---	
αHB 1115.631	-10.1	---	
αHB 1422.704	-3.2	---	
αHB 1628.904	-4.8	---	
αHB 1876.893	-2.3	---	
αHB 1935.972	-3.2	---	
βHB 1265.830	-2.2	---	
βHB 1274.726	-1.9	---	
βHB 1449.796	-7.6	---	
βHB 1866.012	-7.2	---	
		GAPDH 795.422	4.3
		GAPDH 977.547	5.4
GAPDH 1499.778	7.4		
		GAPDH 1763.813	6.1
		myoglobin 1592.820	-11.9

Table S1. Putative identification of haemoglobin, glyceraldehyde 3-phosphate hydrogenase (GAPDH) and myoglobin in blind porcine and bovine samples versus the corresponding intravenous blood samples.

Figures

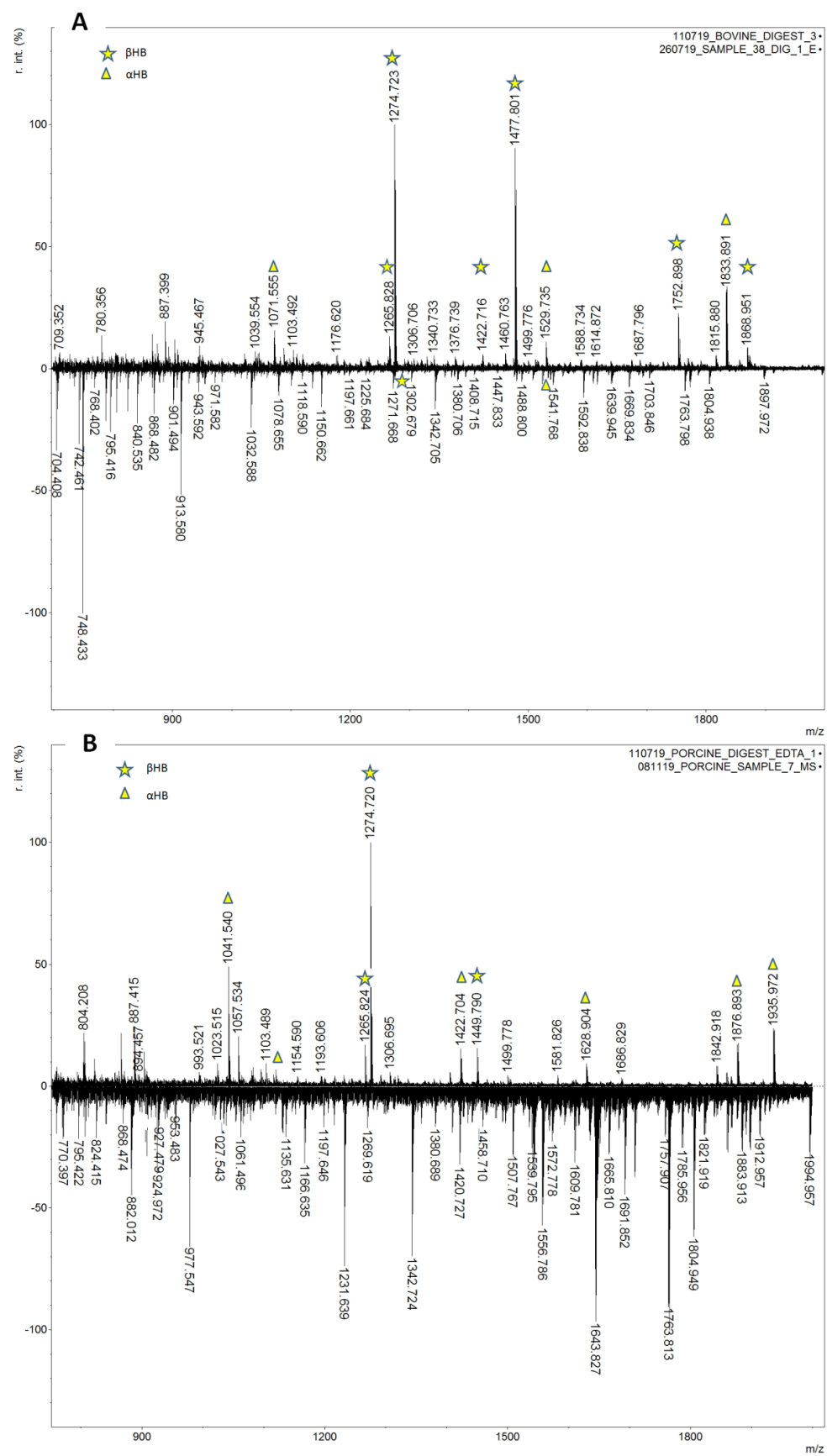


Fig. S1. MALDI MS spectral comparison of intravenous reference blood and blind blood samples for bovine (A) and porcine (B). The spectral profiles appear different in both cases with haemoglobin (HB) signals only present in the intravenous samples but not in the blind samples.

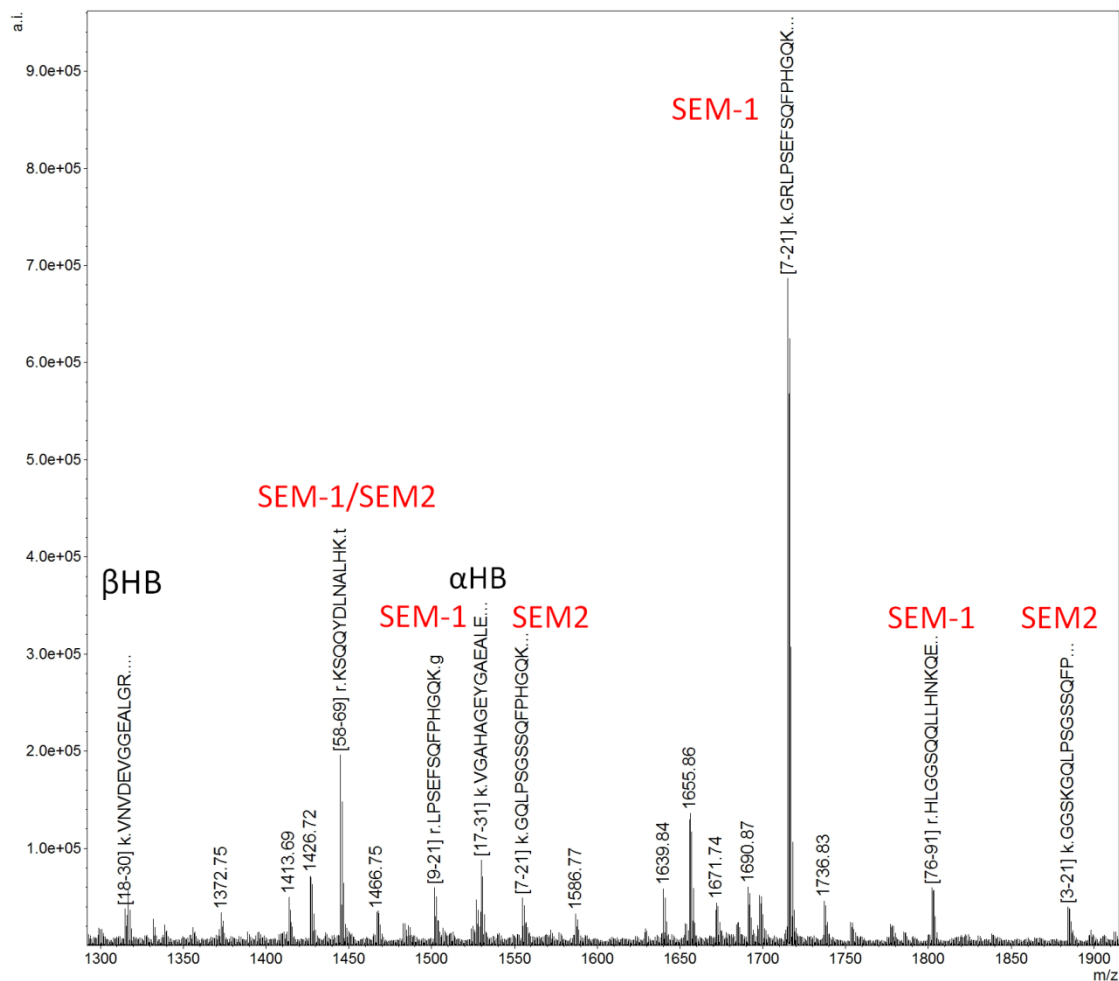


Fig. S2. MALDI MS spectrum of blind sample 32 (Semen). Haemoglobin and semenogelin 1 and 2 ion signals were putatively assigned except for m/z 1714.85 which was confirmed by MS/MS.

Accession numbers list of putatively identified and confirmed proteins

Bovine GAPDH (UniProtKB-P10096)

Bovine Haemoglobin (alpha chain) (UniProtKB - P01966)

Bovine Haemoglobin (beta chain) (UniProtKB - P02070)

Bovine Myoglobin (UniProtKB - P02192)

Chicken GAPDH (UniProtKB- P00356)

Chicken Haemoglobin (alpha chain) (UniProtKB - P01994)

Chicken Haemoglobin (beta chain) (UniProtKB - P02112)

Human Erythrocyte protein band 4.2 (UniProtKB - P16452)

Human Semenogelin -1(UniProtKB - P04279)

Human Semenogelin-2 (UniProtKB - P04279)

Human Haemoglobin (alpha chain) (UniProtKB - P69905)

Human Haemoglobin (beta chain) (UniProtKB - P68871)

Porcine GAPDH (UniProtKB - P00355)

Porcine Haemoglobin (alpha chain) (UniProtKB - P01965)

Porcine Haemoglobin beta chain) (UniProtKB - P02067)

Porcine Myoglobin (UniProtKB - P02189)