

Supplementary Materials: Interspecies diversity of osmotic gradient deformability of red blood cells in human and seven vertebrate animal species

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Table S1. Summary of significantly differing hematological parameters in human, dog, cat, pig, sheep, mouse, rat and rabbit blood samples.

	human	dog	cat	pig	sheep	mouse	rat	rabbit
human	n.a.	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	WBC: p=0.009, RBC, Hgb, Hct, MCV, MCH: p<0.001 MCHC: p=0.003	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, MCV, MCH, MCHC, Plt: p<0.001 Hgb: p=0.005	WBC, RBC, MCV, MCH, Plt: p<0.001 Hct: p=0.028	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	WBC: p=0.035 Hct: p=0.002 RBC, Hgb, MCV, MCH, Plt: p<0.001
dog	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	n.a.	RBC, Hgb, Hct, MCV, MCH, MCHC: p<0.001 Plt: p=0.004	RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC: p<0.001 Plt: p=0.019
cat	WBC: p=0.009 RBC, Hgb, Hct, MCV, MCH: p<0.001 MCHC: p=0.003	RBC, Hgb, Hct, MCV, MCH, MCHC: p<0.001 Plt: p=0.004	n.a.	RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	WBC, Hgb, Hct, MCV, MCH: p<0.001 RBC: p=0.004	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001 MCHC: p=0.004	WBC: p=0.002 RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001

pig	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	n.a.	WBC, RBC, Hgb, Hct, MCV, MCH: p<0.001 Plt: p=0.033	WBC, RBC, Hgb, Hct, MCV, MCHC, Plt: p<0.001	WBC, Hgb, MCH, MCHC: p<0.001	WBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001
sheep	WBC, RBC, MCV, MCH, MCHC, Plt: p<0.001 Hgb: p=0.005	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC: p<0.001	WBC, Hgb, Hct, MCV, MCH: p<0.001 RBC: p=0.004	WBC, RBC, Hgb, Hct, MCV, MCH: p<0.001 Plt: p=0.033	n.a.	WBC, RBC, Hgb, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hct, MCV, MCH, MCHC: p<0.001	WBC, RBC, MCV, MCH, MCHC: p<0.001 Hgb: p=0.03 Plt: p=0.044
mouse	WBC, RBC, MCV, MCH, Plt: p<0.001 Hct: p=0.028	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCHC, Plt: p<0.001	WBC, RBC, Hgb, MCV, MCH, MCHC, Plt: p<0.001	n.a.	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	RBC, Hct, MCV, MCH, Plt: p<0.001
rat	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001 MCHC: p=0.004	WBC, Hgb, MCH, MCHC: p<0.001	WBC, RBC, Hct, MCV, MCH, MCHC: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, Plt: p<0.001	n.a.	WBC, Hgb, MCV, MCH, Plt: p<0.001 Hct p=0.02
rabbit	WBC: p=0.035 Hct: p=0.002 RBC, Hgb, MCV, MCH, Plt: p<0.001	WBC, RBC, Hgb, Hct, MCV, MCH, MCHC: p<0.001 Plt: p=0.019	WBC: p=0.002 RBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, Hgb, Hct, MCV, MCH, MCHC, Plt: p<0.001	WBC, RBC, MCV, MCH, MCHC: p<0.001 Hgb: p=0.03 Plt: p=0.044	RBC, Hct, MCV, MCH, Plt: p<0.001	WBC, Hgb, MCV, MCH, Plt: p<0.001 Hct: p=0.02	n.a.

WBC: white blood cell count; Hct: hematocrit; RBC: red blood cell count; Hgb: hemoglobin; MCV: mean corpuscular volume; MCH: mean corpuscular hemoglobin; MCHC: mean corpuscular hemoglobin concentration, Plt: platelet count

Table S2. Summary of significantly differing conventional and osmotic gradient ektacytometry parameters in human, dog, cat, pig, sheep, mouse, rat and rabbit blood samples.

	human	dog	cat	pig	sheep	mouse	rat	rabbit
human	n.a.	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min, O min, O (EI max), Area: p<0.001 EI max: p=0.003 EI hyper: p=0.005	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , O min, O (EI max), O hyper: p<0.001 Area: p=0.009	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min, O (EI max), O hyper: p<0.001 O min: p=0.002 Area: p=0.005	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.004	EI at 3 Pa, SS _{1/2} , EI _{max} /SS _{1/2} : p<0.001 O (EI max): p=0.003 O hyper: p=0.004	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , O hyper: p<0.001 EI min: p=0.004 EI max: p=0.0047 Area: p=0.015	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} : p<0.001 EI min: p=0.004 EI max, EI hyper: p=0.012 O (EI max): p=0.034 Area: p=0.007
dog	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min, O min, O (EI max), Area: p<0.001 EI max: p=0.003 EI hyper: p=0.005	n.a.	EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min, EI max, EI hyper, O min, O (EI max), O hyper, Area: p<0.001	EI _{max} , EI max, EI hyper, O min, O (EI max), O hyper, Area: p<0.001 SS _{1/2} : p=0.004	EI at 3 Pa, SS _{1/2} , EI _{max} , EI min, EI max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.01	EI _{max} , SS _{1/2} , EI min, O min, O (EI max), O hyper, Area: p<0.001 EI hyper: p=0.01 EI at 3 Pa: p=0.006	O min, O (EI max), O hyper: p<0.001 EI max: p=0.002 Area: p=0.012	SS _{1/2} , O min, O (EI max): p<0.001 EI at 3 Pa: p=0.011 EI _{max} /SS _{1/2} : p=0.031 EI min: p=0.043
cat	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , O min, O (EI max), O hyper: p<0.001 Area: p=0.009	EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min, EI max, EI hyper, O min, O (EI max), O hyper, Area: p<0.001	n.a.	SS _{1/2} , EI _{max} /SS _{1/2} , Area: p<0.001 EI min: p=0.003 O hyper: p=0.039	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI max, EI hyper, O min, Area: p<0.001 O (EI max):	EI at 3 Pa, EI _{max} , EI _{max} /SS _{1/2} , EI max, EI hyper, O min, O (EI max), Area:	EI _{max} , EI _{max} /SS _{1/2} , O (EI max), O hyper, Area: p<0.001 EI min: p=0.035	EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min, EI max, O min, O (EI max),

					p=0.011 EI min: p=0.014 O hyper: p=0.019	p<0.001 SS _{1/2} : p=0.043	O min: p=0.003 EI max: p=0.005 EI hyper: p=0.011 SS _{1/2} : p=0.043	Area: p<0.001 EI hyper: p=0.006 EI at 3 Pa: p=0.032
pig	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min, O (EI max), O hyper: p<0.001 O min: p=0.002 Area: p=0.005	EI _{max} , EI max, EI hyper, O min, O (EI max), O hyper, Area: p<0.001 SS _{1/2} : p=0.004	SS _{1/2} , EI _{max} /SS _{1/2} , Area: p<0.001 EI min: p=0.003 O hyper: p=0.039	n.a.	EI at 3 Pa, SS _{1/2} , EI _{max} , EI max, EI hyper, O min, O (EI max), Area: p<0.001	EI at 3 Pa, SS _{1/2} , EI max, EI hyper: p<0.001 EI min: p=0.003 O (EI max): p=0.015	EI max, O min, O (EI max): p<0.001 EI _{max} /SS _{1/2} : p=0.009 Area: p=0.01 SS _{1/2} : p=0.024	EI _{max} , EI max, Area: p<0.001 O min: p=0.002 EI _{max} /SS _{1/2} , O (EI max): p=0.003 EI hyper: p=0.004 EI at 3 Pa: p=0.007 EI min: p=0.008
sheep	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.004	EI at 3 Pa, SS _{1/2} , EI _{max} , EI min, EI max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.01	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI max, EI hyper, O min, Area: p<0.001 O (EI max): p=0.011 EI min: p=0.014 O hyper: p=0.019	EI at 3 Pa, SS _{1/2} , EI _{max} , EI max, EI hyper, O min, O (EI max), Area: p<0.001	n.a.	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.003	EI at 3 Pa, SS _{1/2} , EI _{max} , EI min, EI max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.024	EI at 3 Pa, EI _{max} , SS _{1/2} , EI min, EI max, EI hyper, O min, O (EI max), Area: p<0.001 EI _{max} /SS _{1/2} : p=0.033
mouse	EI at 3 Pa, SS _{1/2} , EI _{max} /SS _{1/2} : p<0.001	EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI min,	EI at 3 Pa, EI _{max} , EI _{max} /SS _{1/2} , EI max,	EI at 3 Pa, EI _{max} , SS _{1/2} , EI hyper:	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , EI	n.a.	EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , O	EI min, EI max, O (EI max),

	O (EI max): p=0.003 O hyper: p=0.004	O min, O (EI max), O hyper, Area: p<0.001 EI hyper: p=0.01 EI at 3 Pa: p=0.006	EI hyper, O min, O (EI max), Area: p<0.001 SS _{1/2} : p=0.043	p<0.001 EI min: p=0.003 O (EI max): p=0.015	max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.003		hyper: p<0.001 EI at 3 Pa: p=0.004 O min: p=0.014 EI min: p=0.023	Area: p<0.001 O min: p=0.007 SS _{1/2} : p=0.009
rat	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , O hyper: p<0.001 EI min: p=0.004 EI max: p=0.0047 Area: p=0.015	O min, O (EI max), O hyper: p<0.001 EI max: p=0.002 Area: p=0.012	EI _{max} , EI _{max} /SS _{1/2} , O (EI max), O hyper, Area: p<0.001 O min: p=0.003 EI min: p=0.035 EI max: p=0.005 EI hyper: p=0.011 SS _{1/2} : p=0.043	EI max, O min, O (EI max): p<0.001 EI _{max} /SS _{1/2} : p=0.009 SS _{1/2} : p=0.024 Area: p=0.01	EI at 3 Pa, EI _{max} , SS _{1/2} , EI min, EI max, EI hyper, O min, O (EI max), Area: p<0.001 O hyper: p=0.024	EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} , O hyper: p<0.001 EI at 3 Pa: p=0.004 O min: p=0.014 EI min: p=0.023	n.a.	EI _{max} , SS _{1/2} : p<0.001 EI at 3 Pa: p=0.027
rabbit	EI at 3 Pa, EI _{max} , SS _{1/2} , EI _{max} /SS _{1/2} : p<0.001 EI min: p=0.004 Area: p=0.007 EI max, EI hyper: p=0.012 O (EI max): p=0.034	SS _{1/2} , O min, O (EI max): p<0.001 EI at 3 Pa: p=0.011 EI _{max} /SS _{1/2} : p=0.031 EI min: p=0.043	EI _{max} , SS _{1/2} , EI min, EI max, O min, O (EI max), Area: p<0.001 EI hyper: p=0.006 EI at 3 Pa: p=0.032	EI _{max} , EI max, EI min: p=0.008 O min: p=0.002 O (EI max): p=0.003 EI hyper: p=0.004 Area: p<0.00 EI at 3 Pa: p=0.007 EI _{max} /SS _{1/2} : p=0.003	EI at 3 Pa, EI _{max} , SS _{1/2} , EI min, EI max, EI hyper, O min, O (EI max), Area: p<0.001 EI _{max} /SS _{1/2} : p=0.033	EI min, EI max, O (EI max), Area: p<0.001 O min: p=0.007 SS _{1/2} : p=0.009	EI _{max} , SS _{1/2} : p<0.001 EI at 3 Pa: p=0.027	n.a.

EI at 3 Pa: elongation index at 3 Pa, EI_{max}: calculated maximal elongation index, SS_{1/2}: shear stress at half EI_{max},

EI min: minimal elongation index in low osmolar environment, O min: osmolality at EI min, EI max: the maximal elongation index in the function of osmolality, O (EI max): the osmolality at EI max, EI hyper: half of the maximal elongation index at high osmolar environment, O hyper: osmolality at EI hyper, Area: calculated from the area under the individual elongation index-osmolality curves.