Supporting Information

Electrical impedance characterization of erythrocyte response to cyclic hypoxia in sickle cell disease

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Table of contents

Table S-1. Summary of results from complete blood count, hemoglobin electrophoresis and the sickled fractions from morphology measurement.

Figure S-1. Normalized values of mean cell area $\overline{\mathrm{A}}$, impedance resistance $\overline{\mathrm{R}}$ and absolute impedance reactance $\overline{|\mathrm{X}|}$ as a function of time within the (a) second, (b) third and (c) fourth hypoxia-normoxia cycle.

Figure S-2. Normalized values of impedance resistance, $\overline{\mathrm{R}}$ and absolute impedance reactance, $\overline{|\mathrm{X}|}$ as a function of time within the (a) second, (b) third and (c) fourth hypoxia session.

Figure S-3. Electrical impedance modelling of sickle cell suspension with (a) a complete equivalent circuit model and (b) a simplified circuit model.

Table S-1. Summary of results from complete blood count, hemoglobin electrophoresis and the sickled fractions from morphology measurement.

Variables	*ss1*	*ss2*	*ss3*	*ss4*	*ss5*
MCV (fL)	81.6	101.9	91.9	95.7	108.1
MCH (pg)	29.1	37.4	33.7	33.8	38.9
MCHC (g/dL)	35.7	36.7	36.7	35.3	36.0
Hgb A (%)	0	0	0	13.6	0
Hgb A2 (%)	3.0	2.6	3.0	3.4	2.8
Hgb F (%)	17.4	23.2	20.3	14.2	24.2
Hgb S, D, Q (%)	79.6	74.2	76.7	68.8	73.0
Sickled fraction (%)	95.8±3.0	93.1±2.3	91.6±3.6	95.1±1.6	95.1±3.3

MCV: Mean corpuscular volume; MCH: Mean corpuscular haemoglobin; MCHC: Mean corpuscular hemoglobin concentration; Hgb: hemoglobin.

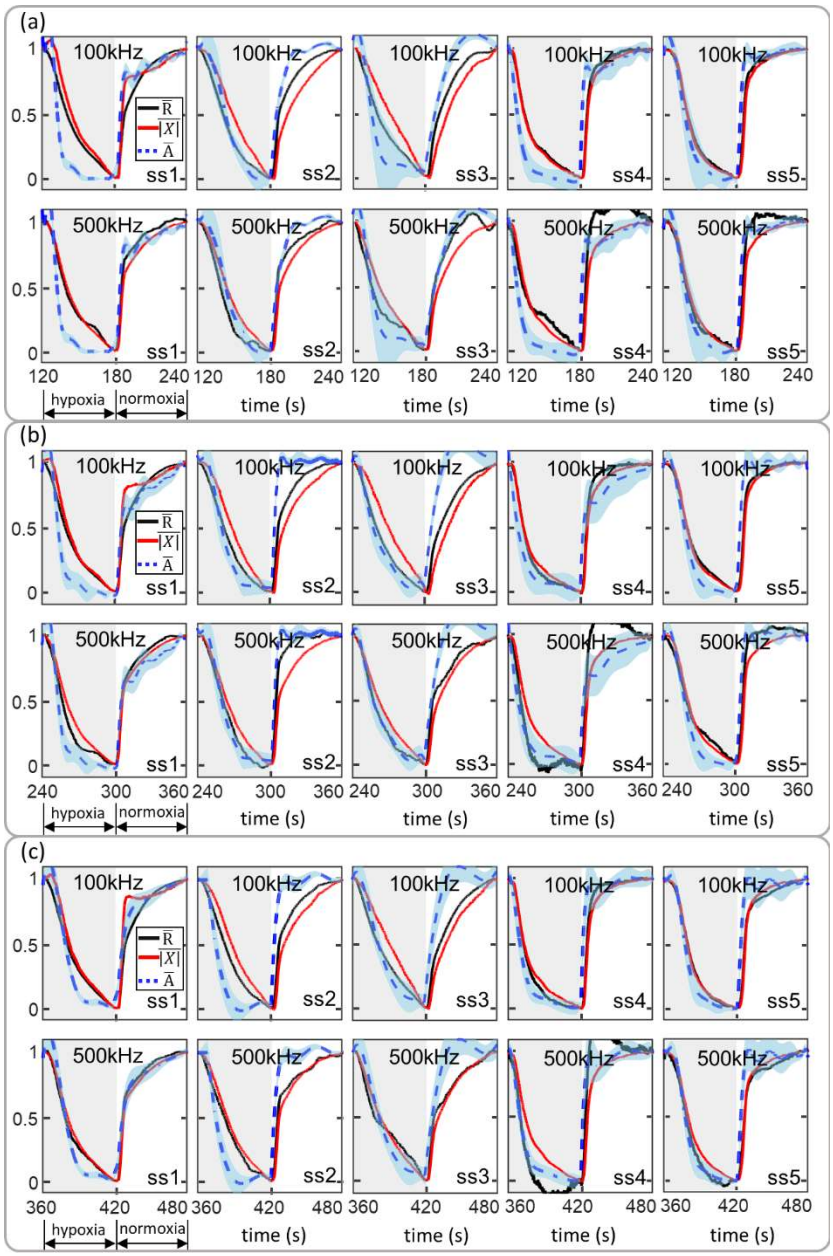

Figure S-1. Normalized values of mean cell area $\bar{A}$ (blue dashed curve) with standard deviation (light blue shading), impedance resistance $\bar{R}$ (black curve) and absolute impedance reactance $|\bar{X}|$ (red curve) as a function of time within the (a) second, (b) third and (c) fourth hypoxia-normoxia cycle.

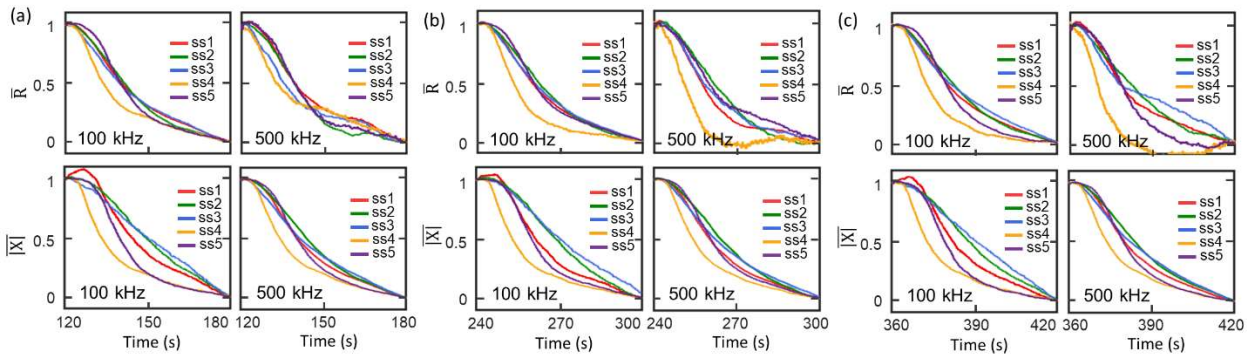

Figure S-2. Normalized values of impedance resistance, $\bar{R}$ and absolute impedance reactance, $\overline{|X|}$ as a function of time within the (a) second, (b) third and (c) fourth hypoxia session.

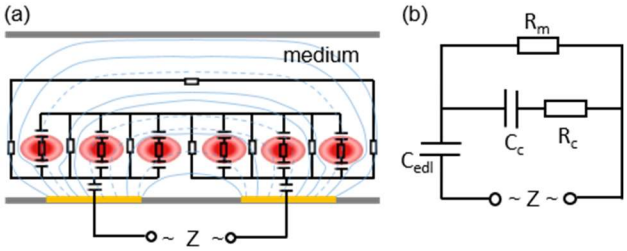

Figure S-3. Electrical impedance modelling of sickle cell suspension with (a) a complete equivalent circuit model and (b) a simplified circuit model.