A non-linear mathematical model using optical sensor to predict heart decellularization efficacy

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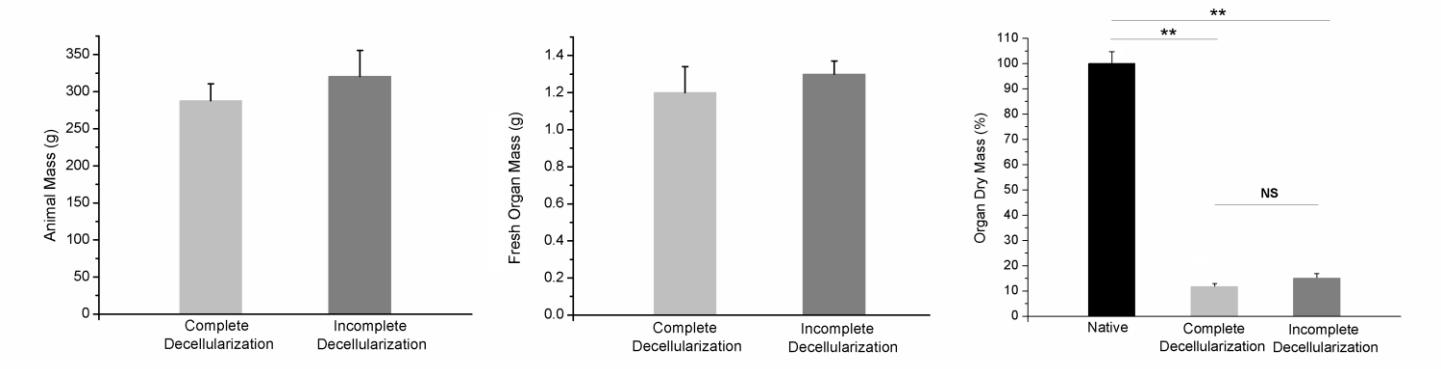
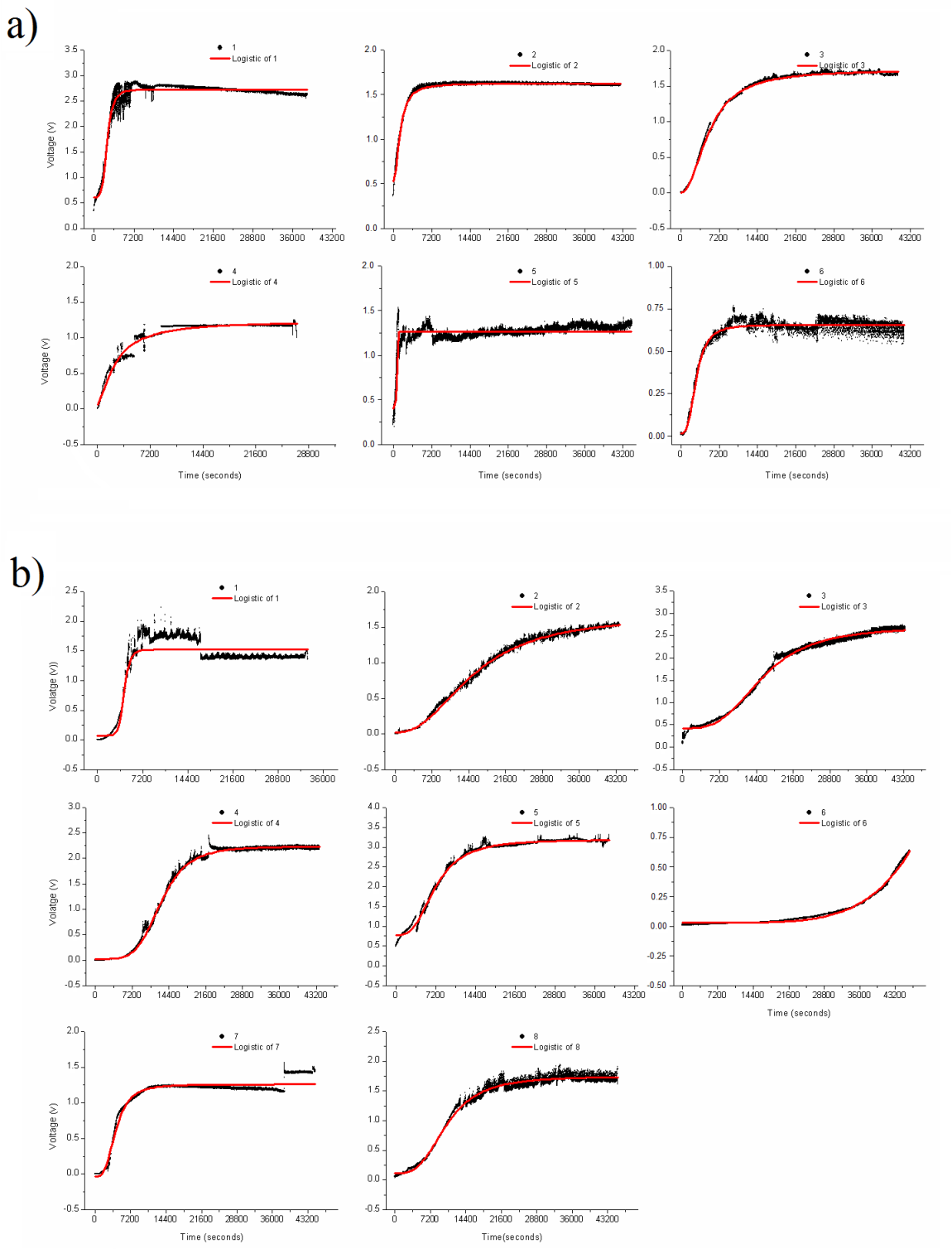
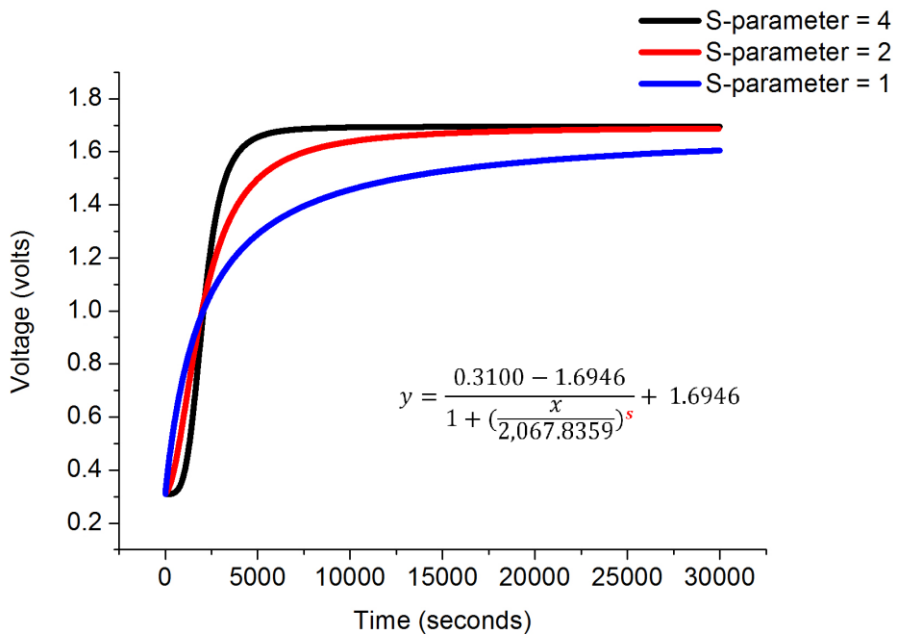


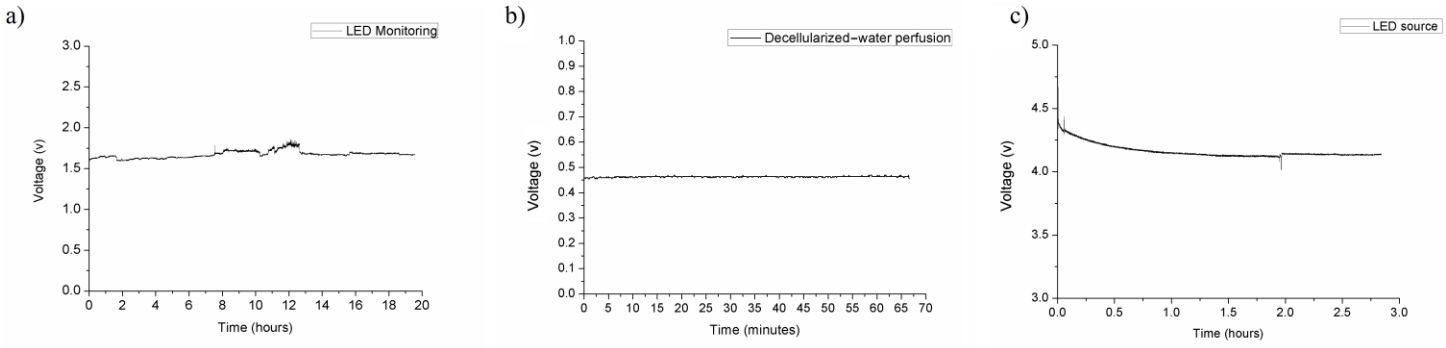
Supplementary Figure 1. a and **b,** Distribution of animal masses and fresh organs masses between groups (Complete Decellularization, n=6; Incomplete Decellularization, n=8; unpaired two-tailed t-test.). **c,** Representation of hearts dry weight from the Native, Complete Decellularization and Incomplete Decellularization groups (n=4 per group; Welch one-way ANOVA) $^{**}p<0.05$ *vs.* Native.



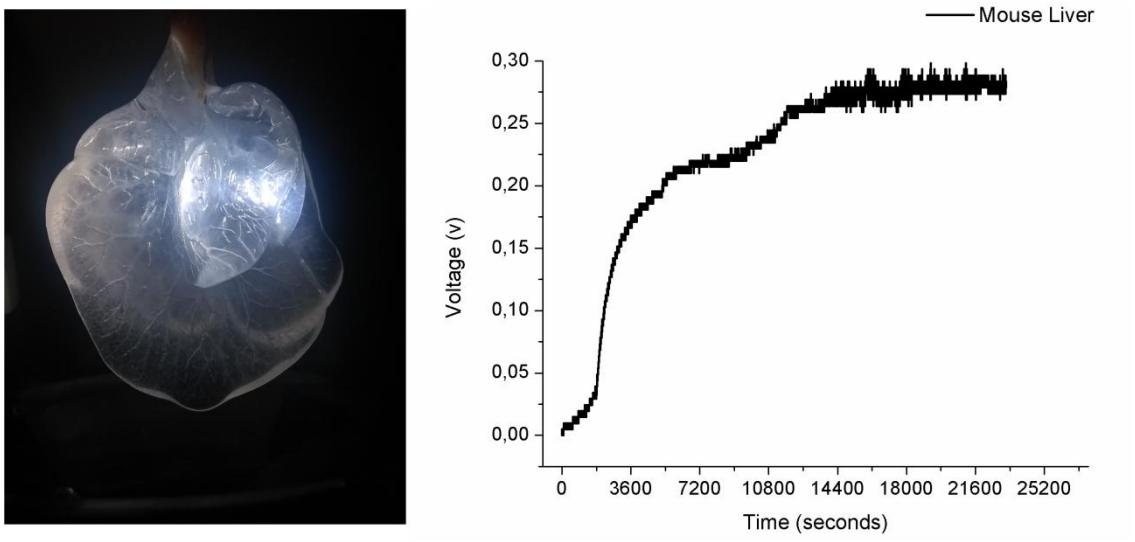
Supplementary Figure 2.a, Original "Voltage x Time" curves in black with their respective fits shown in red for the Decellularized Group. **b,** Original "Voltage x Time" curves shown in black with their respective fits in red for the Incomplete Decellularization group. The curves were fitted by a four-parametric non linear model described by Gadagkar and Call [27].



Supplementary Figure 3. Representation of the influence of the *s* parameter on the shape of the curve. Here, the values of the three remaining parameters (A1, A2 and x_0) of the Decellularized group were set, while the *s* parameter or values 1, 2 and 4 varied.



Supplementary Figure 4. Characterization of the system signal. **a,** The intrinsic variations of the light source monitored for 20 hours. **b,** Voltage measured during water perfusion through a previously decellularized heart, monitored for approximately 1 hour. **c**, Light source behavior from the start time until stabilization.



Supplementary Figure 5. Liver decellularization and voltage-time graphic record. Image of mouse decellularized liver after seven hours of SDS (1% w.v^{-1}) perfusion, and typical voltage-time graphic record.