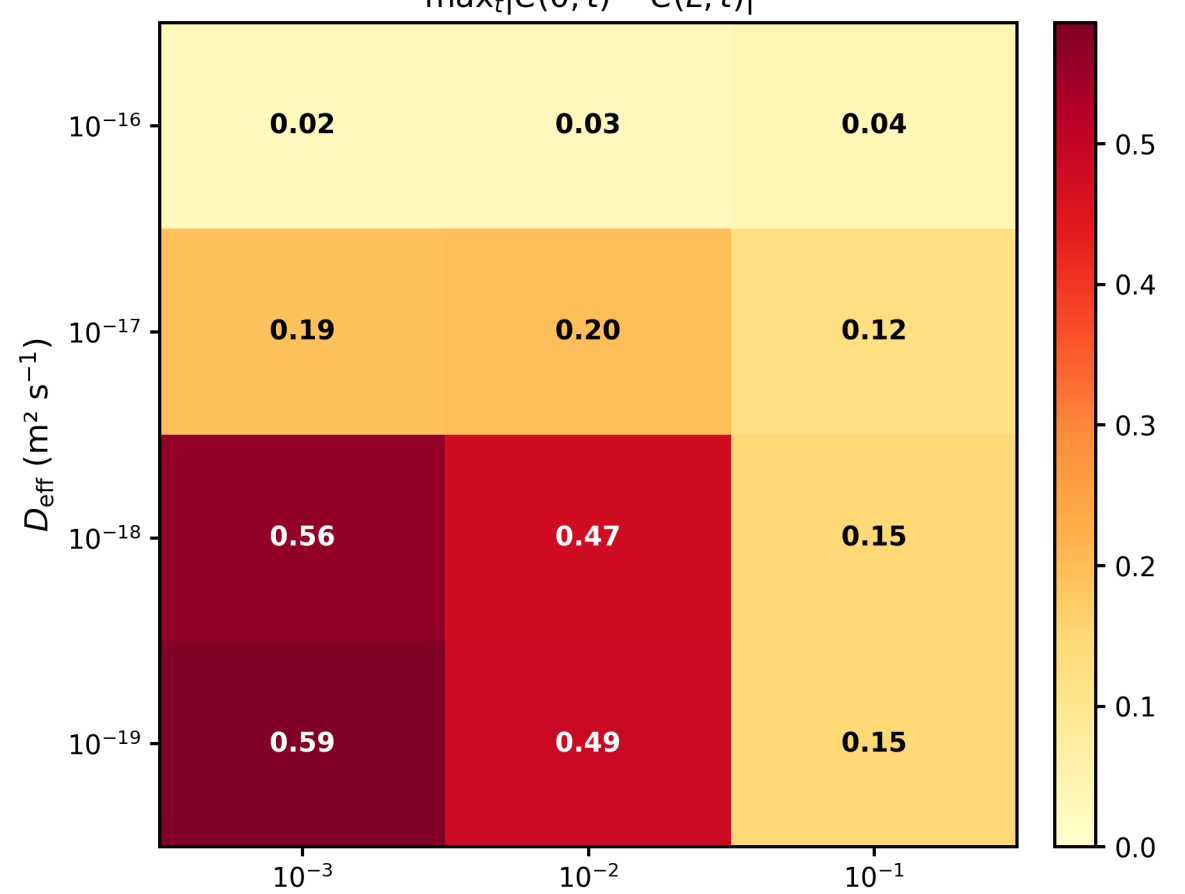
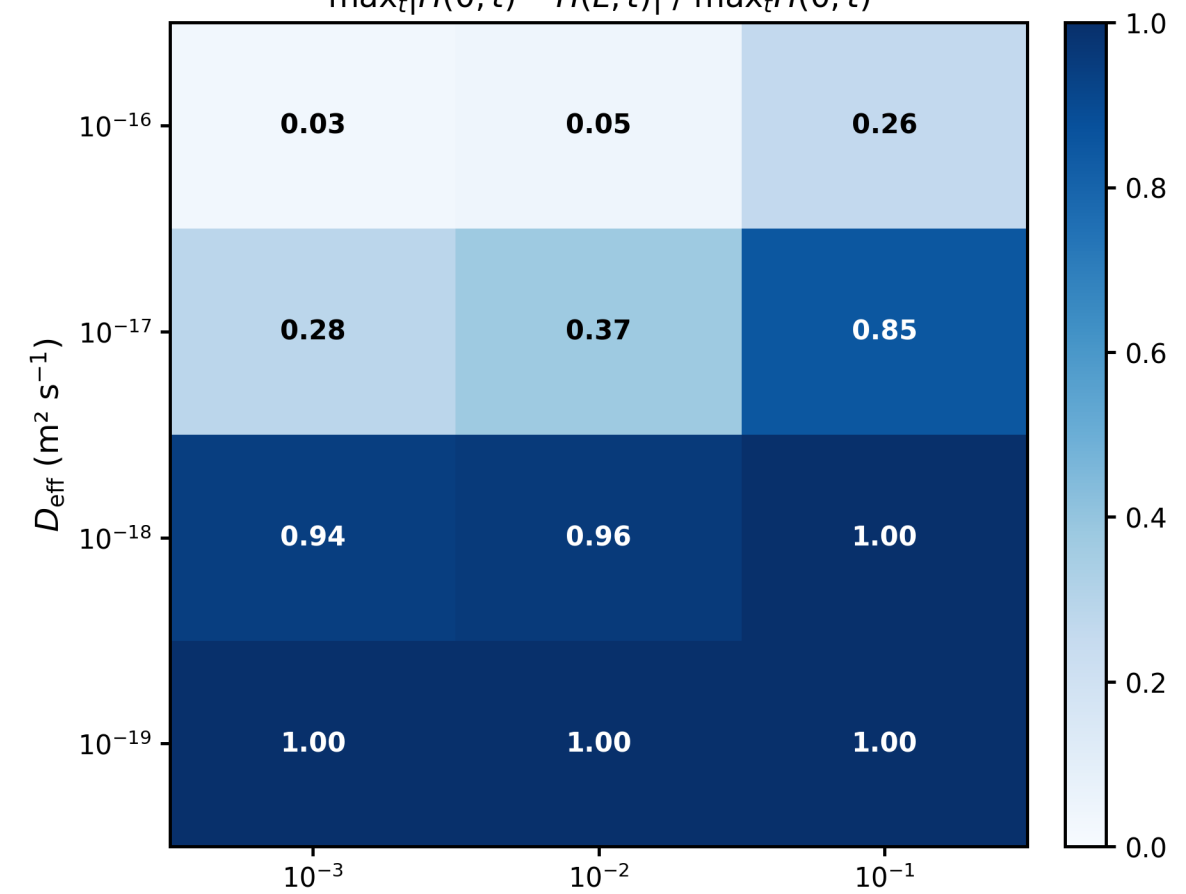


**Figure S2 Transport-regime parameter sweep:  $D_{\text{eff}} \times k_{\text{cons}}$  (1D GOx model, unscaled)**

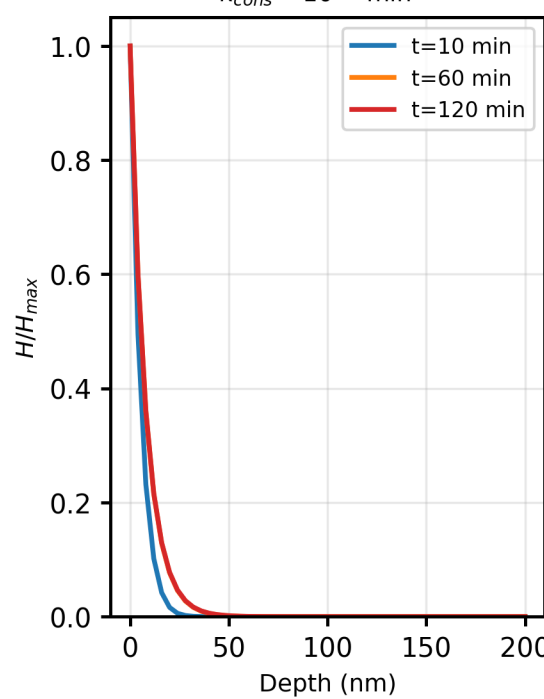
**A** Max degradation heterogeneity  
 $\max_t |C(0, t) - C(L, t)|$



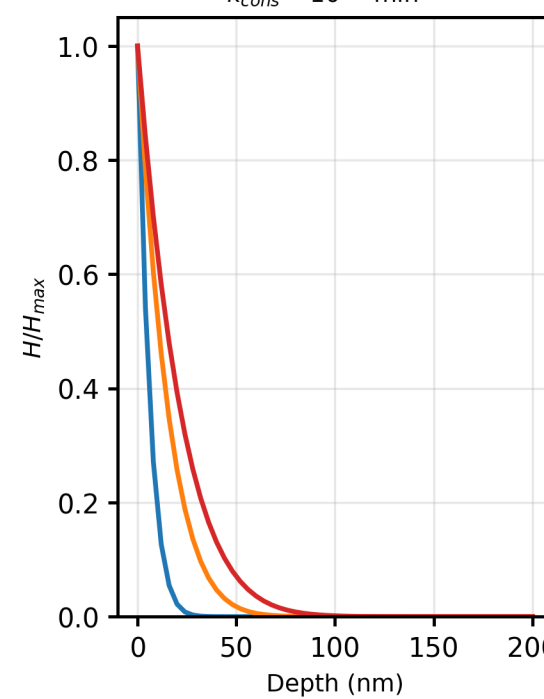
**B** Normalised  $\text{H}_2\text{O}_2$  depth gradient  
 $\max_t |H(0, t) - H(L, t)| / \max_t H(0, t)$



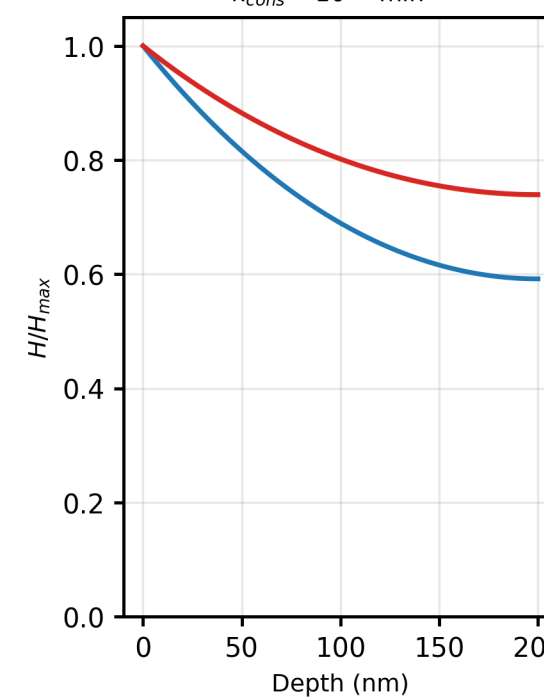
**C**  $D_{\text{eff}} = 10^{-19}$   $k_{\text{cons}} = 10^{-1} \text{min}^{-1}$



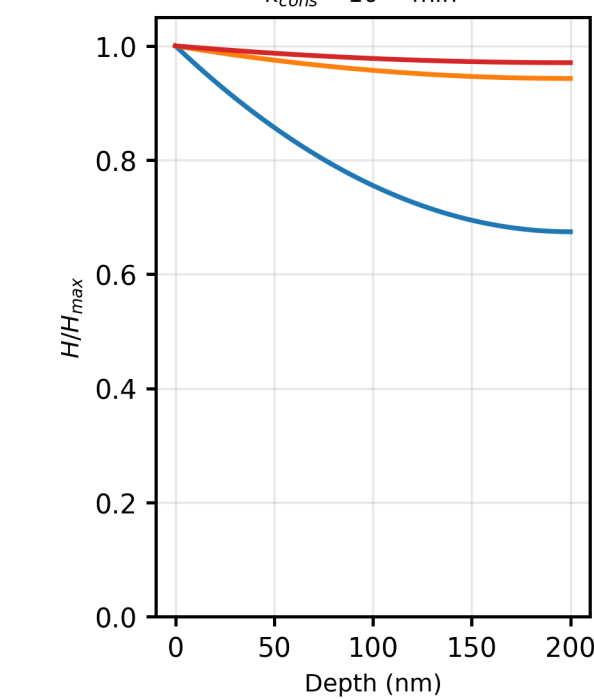
**D**  $D_{\text{eff}} = 10^{-19}$   $k_{\text{cons}} = 10^{-3} \text{min}^{-1}$



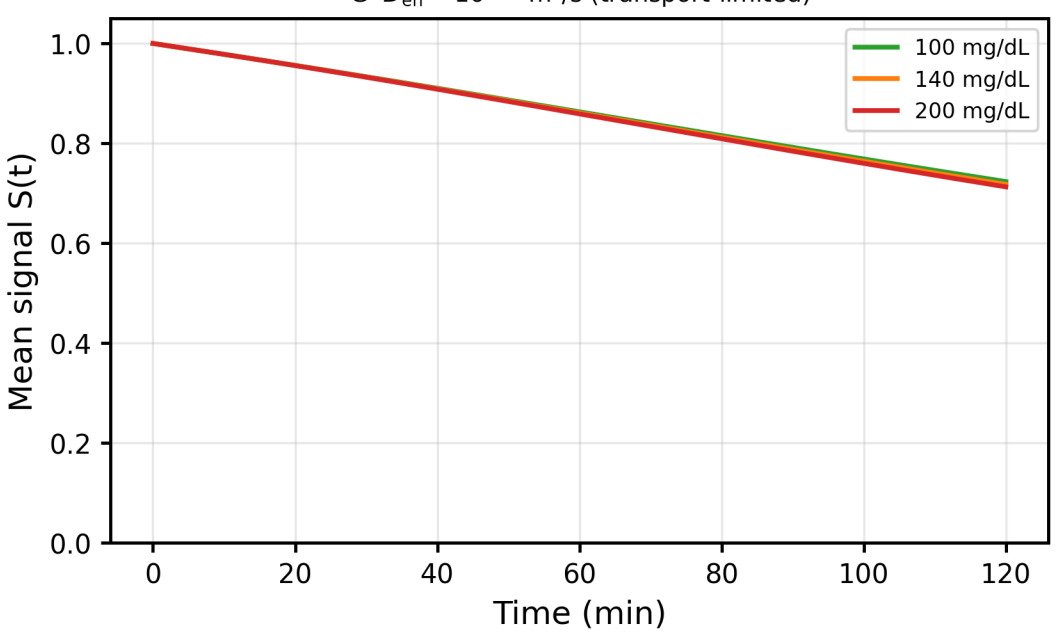
**E**  $D_{\text{eff}} = 10^{-16}$   $k_{\text{cons}} = 10^{-1} \text{min}^{-1}$



**F**  $D_{\text{eff}} = 10^{-16}$   $k_{\text{cons}} = 10^{-3} \text{min}^{-1}$



**G**  $D_{\text{eff}} = 10^{-19} \text{m}^2 \text{s}^{-1}$  (transport-limited)



**H**  $D_{\text{eff}} = 10^{-16} \text{m}^2 \text{s}^{-1}$  (homogeneous limit)

