SUPPLEMENTAL INFORMATION

Secreted Heme Peroxidase from *Dictyostelium discoideum*: Insights into Catalysis, Structure and Biological Role

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Running title: Secreted heme peroxidase from *Dictyostelium discoideum*

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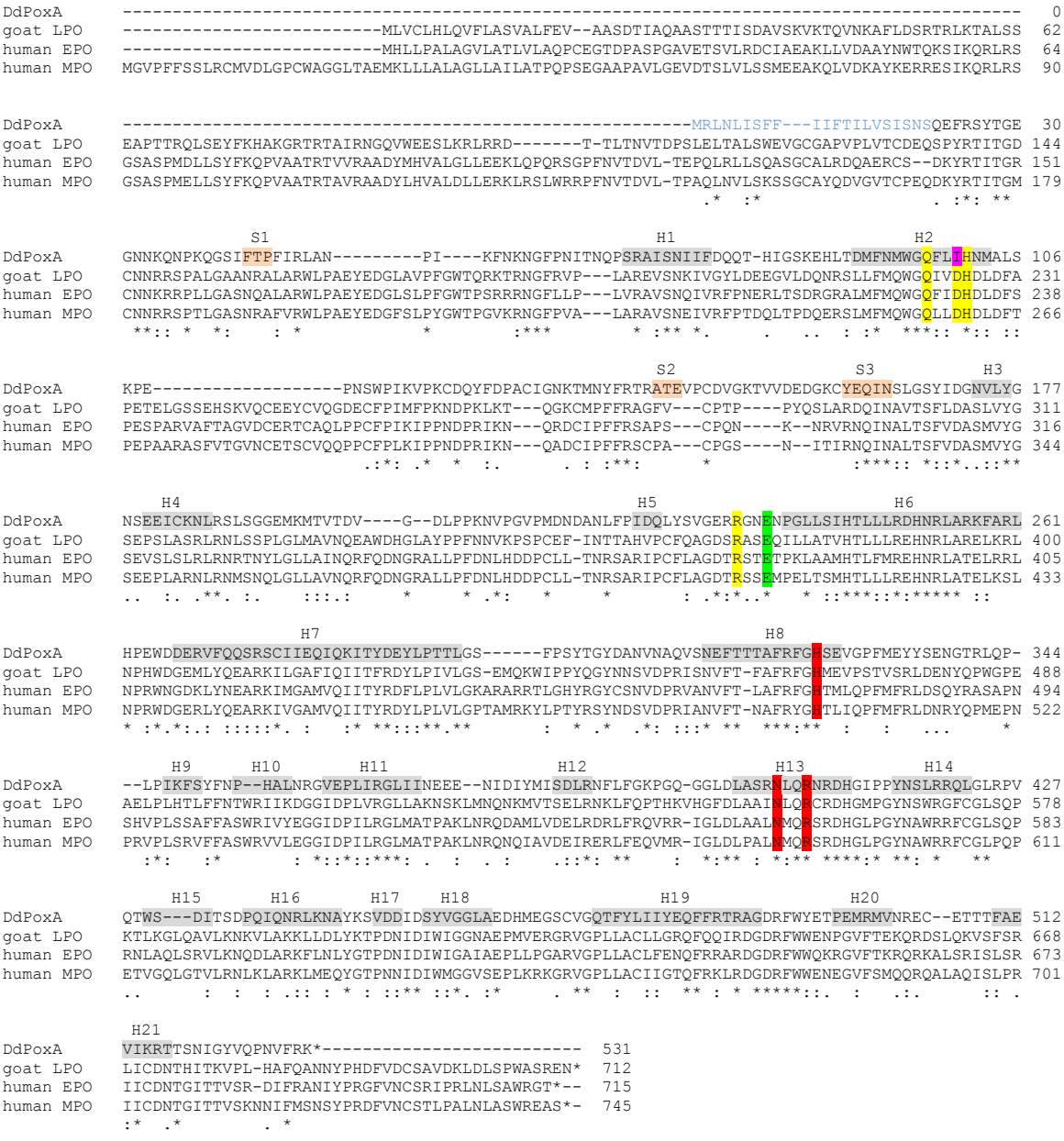
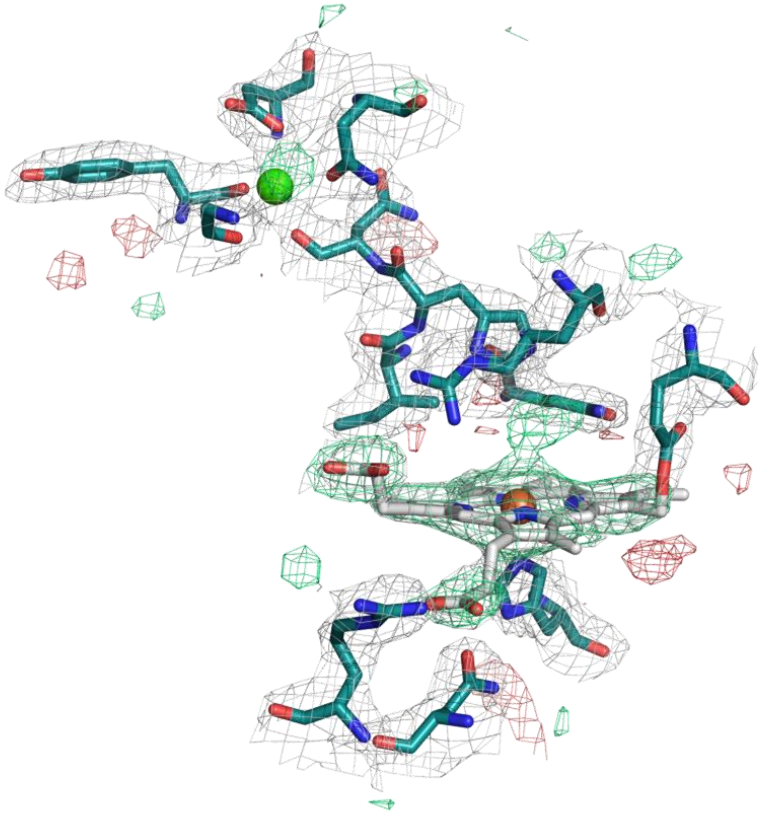
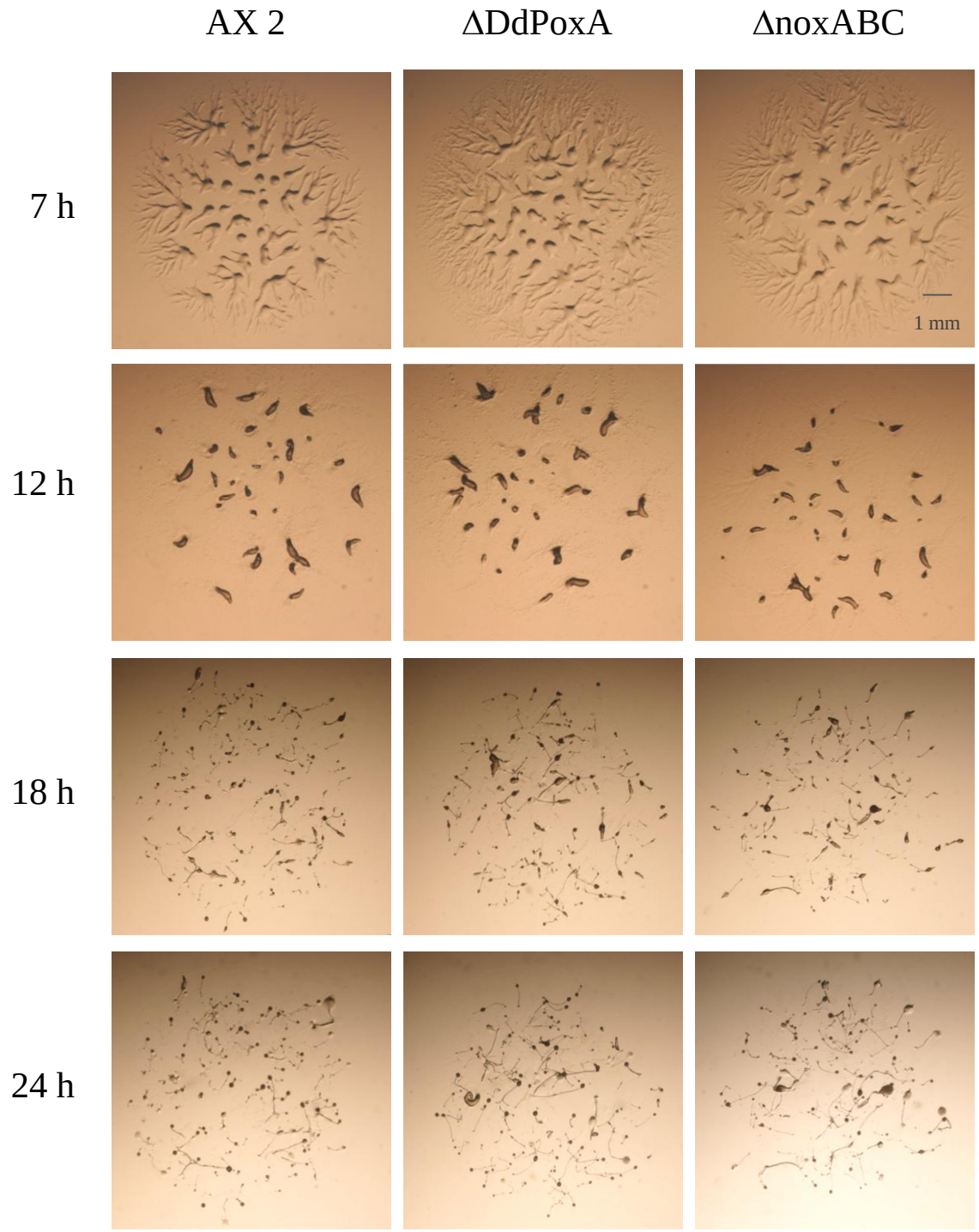


Supplemental Figure S1. Structural alignment of DdPoxA in comparison to mammalian peroxidases. Total sequence alignment of DdPoxA with goat LPO, human EPO and human MPO. Secondary structure elements of DdPoxA are highlighted in grey (α-helices) and orange (β-strands). The native signal sequence of DdPoxA is depicted in blue. Important distal residues are shown in yellow, the conserved glutamate forming the heme to protein bond is highlighted in green. The distal isoleucin of DdPoxA is depicted in pink. The conserved proximal triad is shown in red. Fully conserved residues are marked with an asterisk, a colon indicates residues with strongly similar properties, and a period shows residues with weakly similar properties.



Supplemental Figure S2. OMIT map of DdPoxA active site structure. OMIT map (A) of the active site structure of DdPoxA. The 2.5 Å resolution mF_o-DF_c maps contoured at +/-3 σ positive (green) and negative (red) and $2mF_o$-DF_c maximum-likelihood omit map contoured at 1 σ (grey) are shown. Maps were calculated for a refined model with the heme atoms omitted.



Supplemental Figure S3. Comparative cell development. Representative images of *D. discoideum* wild-type (AX2), Δ*DdpoxA* and Δ*noxABC* mutants throughout the development cycle (7, 12, 18 and 24 h after start of starvation) recorded using a stereomicroscope. Cell density in all images is 1×10^6 cells per drop.