Supplement Fig 1

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Optimized 7         ATGGAATTTTACAAAAACTTCTTCTCGCACTTTACGAATACGTTTAACTCGGAATACATC
Original 7          ATGGAATTTTATAAGAACTTTTTTTCACATTTTACAAACACCTTTAATAGTGAATATATT

Optimized 67        TTTGACCTGAAAGGTAGCACGAAAATCGATGACAACGAAATCGCATCATTTATCAAATCG
Original 67         TTTGACTTAAAGGGTAGTACAAAAATTGATGATAATGAAATTGCGAGTTTTATTAAGTCT

Optimized 127       AACGATCTGTGCGAAAACGACAAGAAAATTGTCGAACTGTACATCGAAAAGAAAATTAAC
Original 127        AATGATTTGTGTGAAAATGATAAGAAGATAGTAGAATTATATATTGAGAAGAAAATAAAT

Optimized 187       AAAATCATGCTGATCAAATACATGGAACGTAAAAACAAAACCCTGTTTCGCGGCAAAATT
Original 187        AAGATTATGTTAATAAAATATATGGAAAGAAAAAACAAAACATTATTTAGAGGAAAGATA

Optimized 247       CATCTGATGCTGGTTTTTATCAGCCCGCTGTGGATTTTCTATATGCTGTACCTGAGCAAA
Original 247        CATTTAATGTTAGTATTTATATCACCATTATGGATTTTTTATATGTTATATTTATCAAAA

Optimized 307       ACCCTGACGGCGCGTATCTTTACGTCTATTGCCGTCCTGTGTATTTTCTTTAACTTTTTC
Original 307        ACATTAACAGCAAGAATATTTACCTCTATAGCTGTACTATGTATTTTCTTTAATTTCTTT

Optimized 367       GCCTCTTTCCTGCTGCATAACTTCGAATGGAAACCGAAATTCTTTTTCATCATCGAAAAA
Original 367        GCCTCCTTTTTTACTTCACAATTTTGAATGGAAACCCAAATTTTTTTTTATAATTGAAAAG

Optimized 427       ATGGATCACTTCGGCATCTTTCTGATGATTAGTGGTTCCCTGCTGCCGGTGCAGGCACTG
Original 427        ATGGATCATTTCGGAATTTTTCTAATGATTAGTGGATCCTTGTTACCAGTTCAAGCTTTA

Optimized 487       CTGTTCAACAAAATCAAACTGCTGTTCTTTATTTCACTGCAATTCTTTGCTATCCTGTTC
Original 487        TTGTTTAATAAAATTAAGTTATTATTTTTTATTTCTCTTCAGTTTTTTGCAATATTATTT

Optimized 547       GGCTGCCTGATTGTTTTCTTTAGTTGTTTCAGCTCTGGTAATCGTTTTATCCGCTCCATG
Original 547        GGATGCCTTATCGTTTTCTTTAGTTGTTTTTCATCGGGAAATAGATTTATAAGGTCCATG

Optimized 607       ATCTTCACCATTGCGGGCCTGCTGCACATTATCTTTATTCGCGACTATGTCTCACTGCTG
Original 607        ATTTTTACTATTGCTGGATTACTACATATTATTTTTATTAGAGATTATGTATCATTATTA

Optimized 667       TACGGCAAAGAATTTATCCTGCTGATTCTGCTGGGCGTGCTGTATATTATCGGTGCCGTG
Original 667        TATGGAAAGGAATTTATTCTTTTAATACTTCTGGGTGTTTTATATATTATAGGAGCAGTT

Optimized 727       ATCTACTCGGTTAAAAAACCGAACATTTTTCCGGGCATTCTGGAATTTCATGAAGTGTTC
Original 727        ATATATTCTGTGAAAAAGCCAAATATTTTTCCAGGTATTTTGGAATTTCATGAAGTTTTC

Optimized 787       CATATTTGCTGTCTGGGTTCTGCTGTCTGCACCTTCGTTCTGAATTGTAGCGTGATTAAA
Original 787        CATATTTGTTGTCTAGGAAGTGCTGTATGCACATTTGTCCTAAATTGTAGTGTTATTAAA

Optimized 847       CGTACC
Original 847        AGAACA
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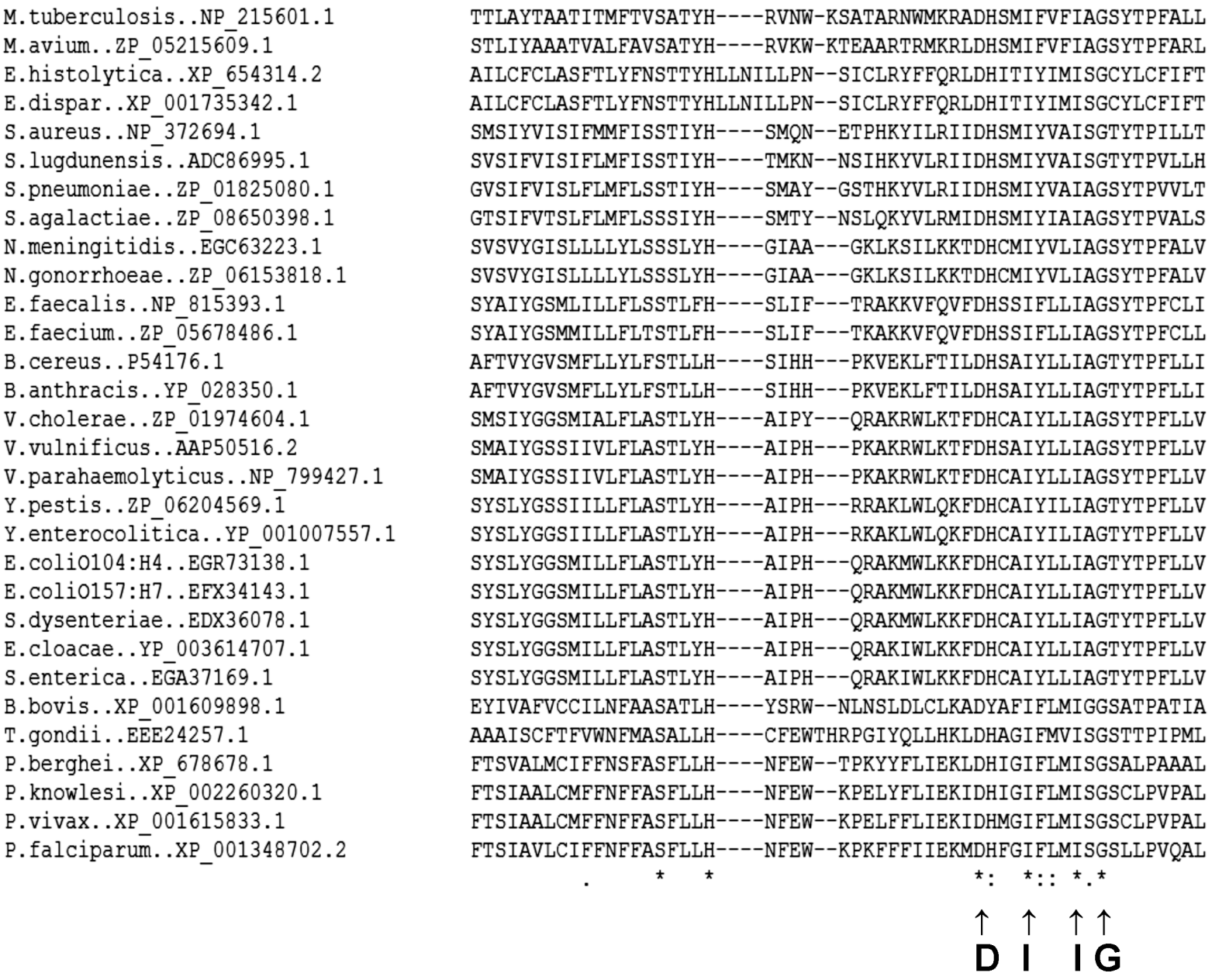
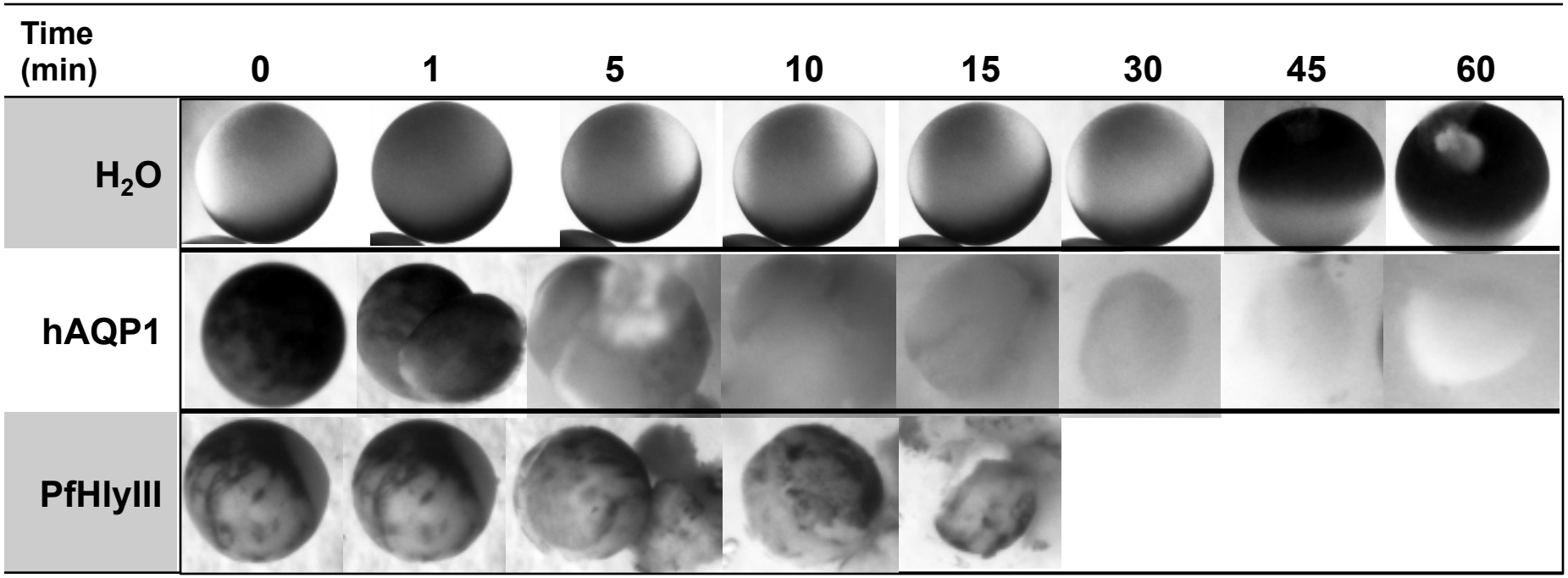
Supplement Fig. 1 Nucleotide sequence of optimized versus native *P. falciparum* hemolysin showing changes in red.



Supplement Figure 2 alignment of conserved regions of hemolysin III



Supplementary Figure 3. Time course of hAQP1 and PfHlyIII expressing oocytes rupturing in hypotonic buffer (water) compared to water –injected controls.