

Supplementary material

Redox reactivity of nonsymbiotic phytoglobins towards nitrite

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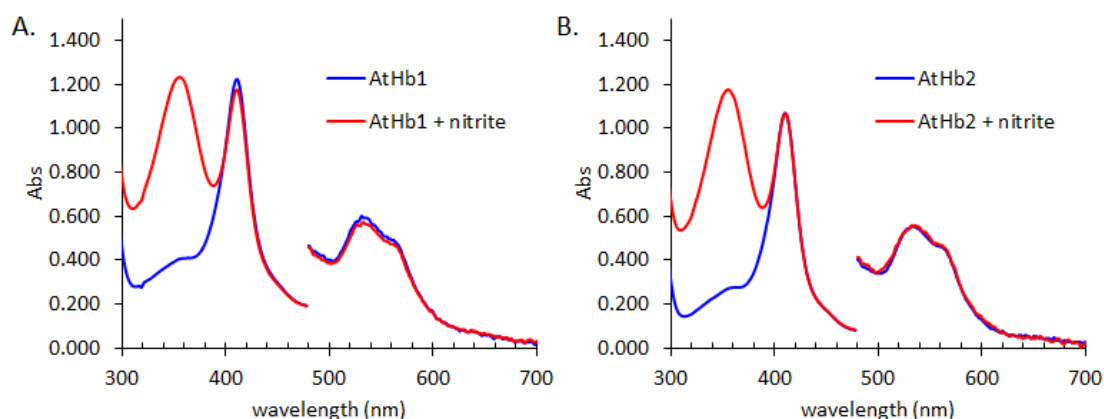


Figure S1. UV-vis spectral changes for the recombinant methemoglobin (HbFe³⁺) of AtHb1 (A) and AtHb2 (B) with nitrite in aerobic conditions. UV-vis spectra of 8 μ M methemoglobin (HbFe³⁺) after addition of nitrite at 40 mM, in 50 mM phosphate buffer pH 7 and 25 °C.

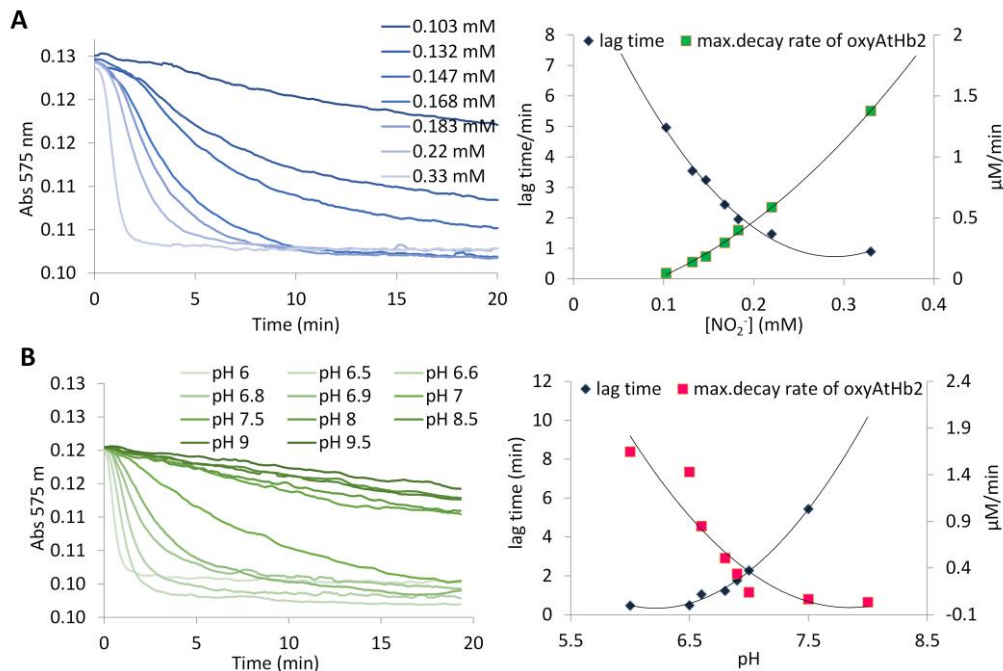


Figure S2. Kinetic profiles and their corresponding lag times and maximum decay rates for the reaction between oxyAtHb2 and nitrite (A) at different concentrations of sodium nitrite, 8 μ M oxyAtHb2 was incubated with NaNO₂ (0.103 - 0.22 mM) in 50 mM phosphate buffer pH 7 **(B)** at different pH values, 8 μ M oxyAtHb2 was incubated with 0.138 mM NaNO₂ in pH 6-9.5.

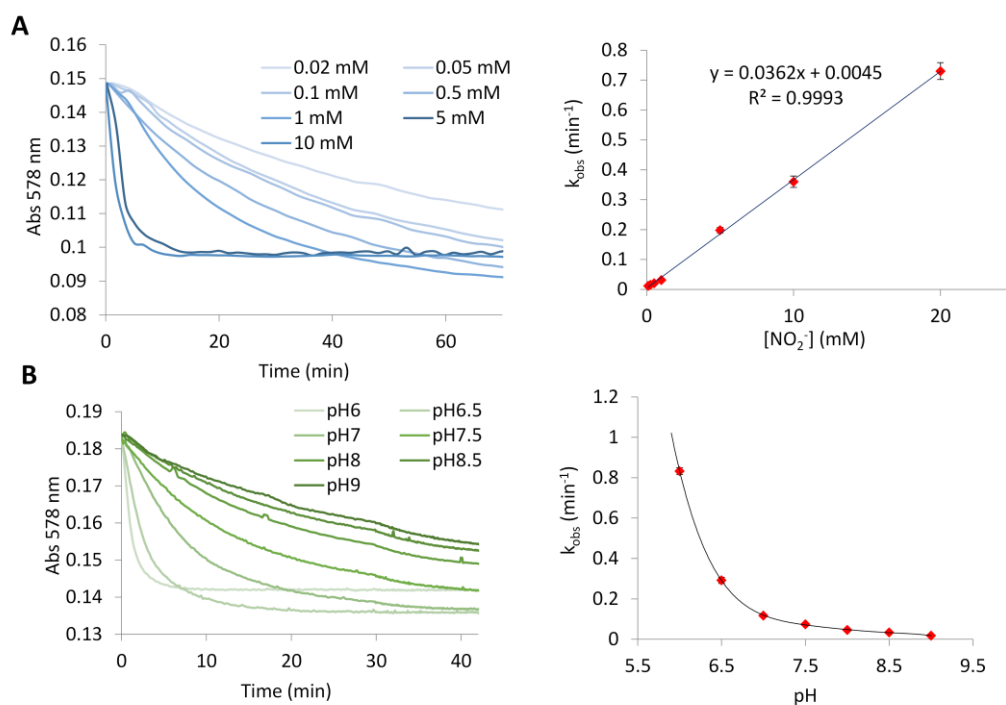


Figure S3. Kinetic profiles and their corresponding k_{obs} values for the reaction between oxyAtHb3 and nitrite (A) at different concentrations of sodium nitrite, $8\mu\text{M}$ oxyAtHb3 was incubated with NaNO_2 (0.02-10 mM) in 50 mM phosphate buffer pH 7 **(B)** at different pH values, $8\mu\text{M}$ oxyAtHb3 was incubated with 5 mM NaNO_2 in pH 6-9.

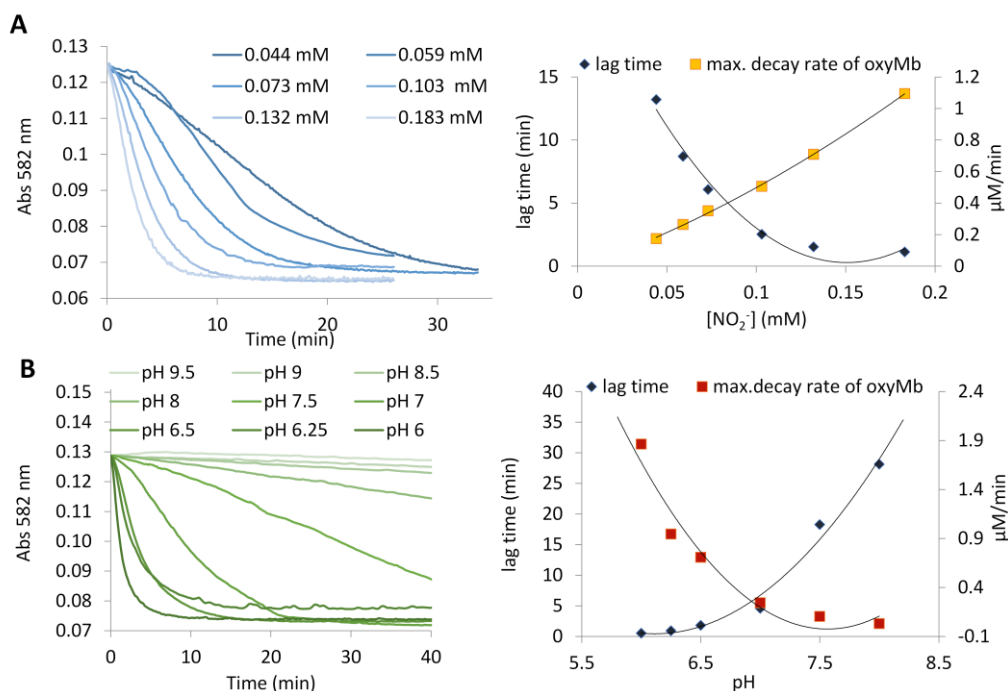


Figure S4. Kinetic profiles and their corresponding lag times and maximum decay rates for the reaction between oxyMb and nitrite (A) at different concentrations of sodium nitrite, $8\mu\text{M}$ oxyMb was incubated with NaNO_2 (0.044-0.183 mM) in 50 mM phosphate buffer pH 7 **(B)** at different pH values, $8\mu\text{M}$ oxyMb was incubated with 0.073 mM NaNO_2 in pH 6-9.5.

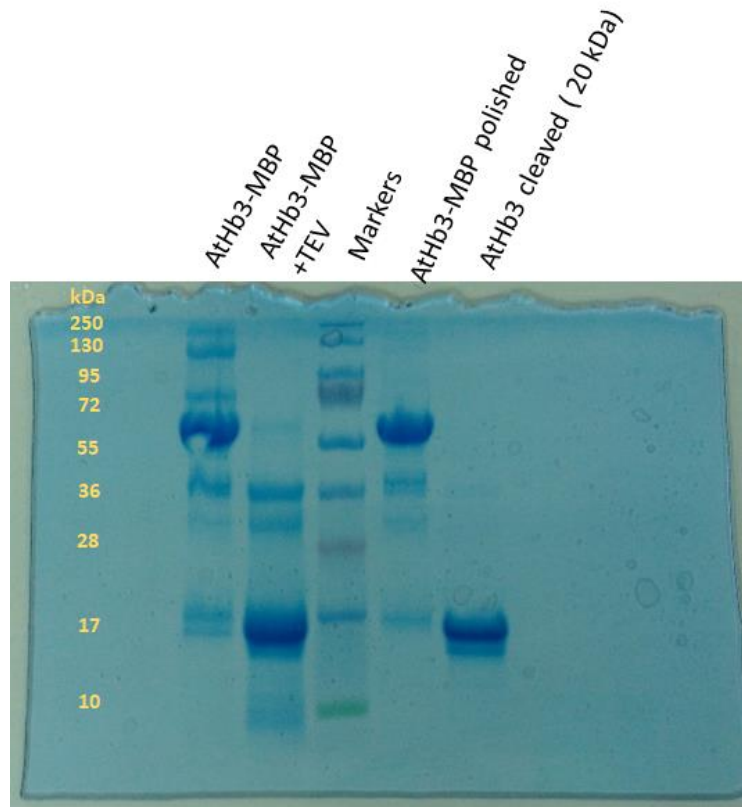


Figure S5. Preparation of pure recombinant AtHb3 phytoglobin. SDS-PAGE showing the TEV mediated His8-MBP removal and purification level of AtHb3. For AtHb1 and AtHb2 see reference: Mot, A.C.; Puscas, C.; Miclea, P.; Naumova-Letia, G.; Dorneanu, S.; Podar, D.; Dissmeyer, N.; Silaghi-Dumitrescu, R. Redox Control and Autoxidation of Class 1, 2 and 3 Phytoglobins from *Arabidopsis Thaliana*. Sci. Rep. 2018, 8, 13714, doi:10.1038/s41598-018-31922-4.