

Supporting Information

MOLECULAR BASIS OF THE BOHR EFFECT IN ARTHROPOD HEMOCYANIN

**Shun Hirota^{1,2}, Takumi Kawahara², Mariano Beltramini³, Paolo Di Muro³, Richard S. Magliozzo⁴,
Jack Peisach⁵, Linda S. Powers⁶, Naoki Tanaka¹, Satoshi Nagao¹, and Luigi Bubacco³**

¹ Graduate School of Materials Science, Nara Institute of Science and Technology, Nara, Japan; ² Department of Physical Chemistry and 21st Century COE Program, Kyoto Pharmaceutical University, Kyoto, Japan; ³ Department of Biology, University of Padova, Padova, Italy; ⁴ Department of Chemistry, Brooklyn College, Brooklyn, NY, USA; ⁵ Department of Physiology and Biophysics, Albert Einstein College of Medicine, Bronx, NY, USA; ⁶ National Center for the Design of Molecular Function, University of Arizona, Tucson, AZ USA.

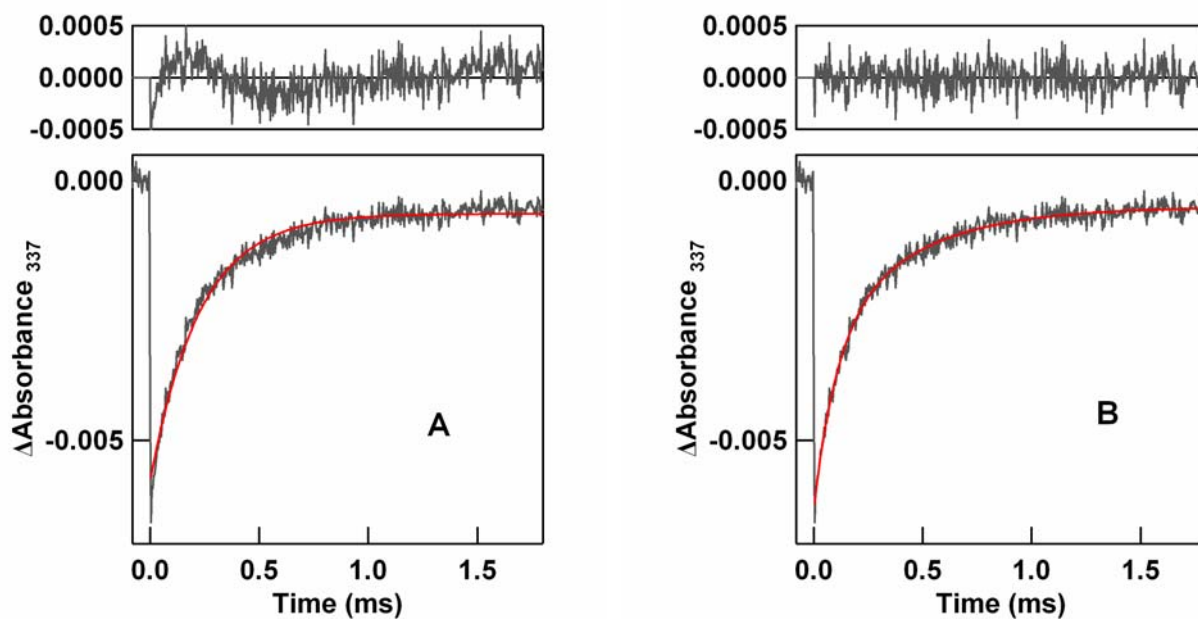


Figure S1. Time-resolved absorbance change of *C. aestuarii* oxyHc obtained by 355-nm pulse irradiation at pH 7.1 under 10% oxygen with 90% nitrogen, together with the least-squares-fitted single (A) and double (B) exponential curves (red lines) and their residuals. The trace is an average of 256 shots. Note that the fitting is not successful for the single exponential.

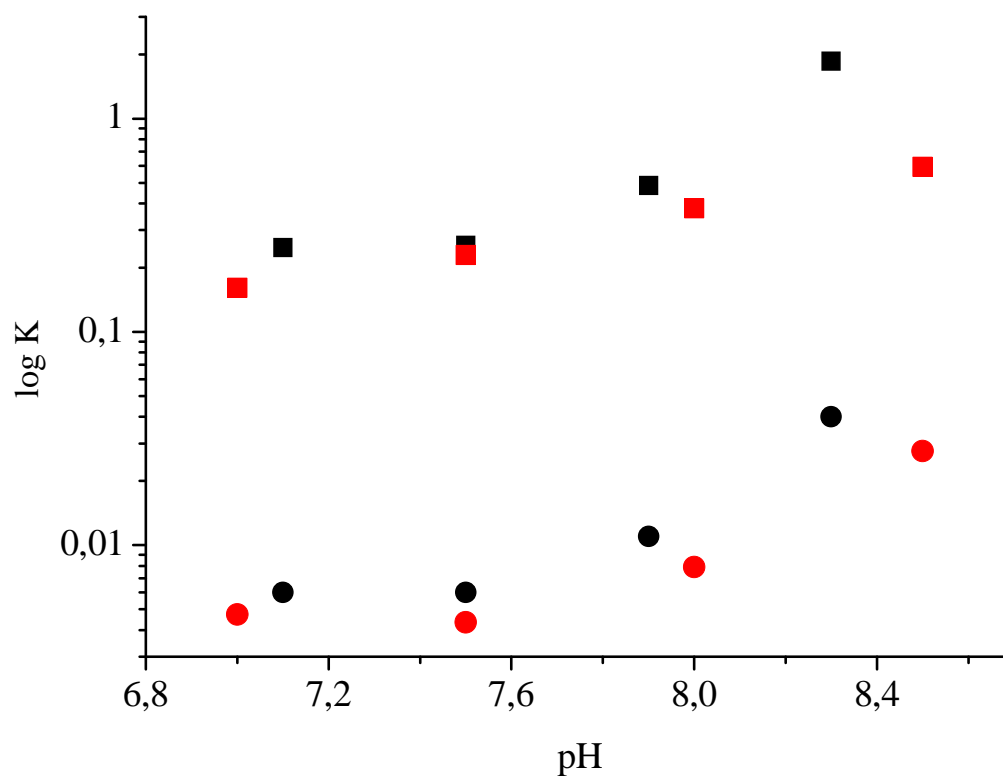


Figure S2 pH dependence of K_R (squares) and K_T (circles) for *Carcinus aestuarii* Hemocyanin (Black) and *Penaeus monodon* Hemocyanin (Red). The data for *Carcinus aestuarii* Hemocyanin are plotted after Table 1 of reference 1 and the data for *Penaeus monodon* Hemocyanin are plotted after Table 3 of reference 35 in the manuscript. These data for both *Carcinus aestuarii* and *Penaeus monodon* Hcs show that the pH dependence of K_T and K_R has a very similar profile.