

Effect of pH on Fe-O₂ bond in the oxygen reactive hemoglobins of *L. pectinata* by X-ray Crystallography

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The bivalve *Lucina pectinata* found in the coastal areas of Puerto Rico possess three haemoglobins from which two are oxygen reactive. Studies have shed some insight of how these two hemeproteins carry their function but raising some questions with it. Studies revealed that these proteins form dimers, whether as homodimer or heterodimer. HbII has been extensively describe in the homodimer form and partially as a heterodimer with HbIII. The HbIII homodimer have proven to be a challenge to crystallographically describe. These hemeproteins are characterized with high association constants and slow dissociation rates. We hypothesize that pH may trigger the oxygen release in these hemeproteins. Here we present solution experiments and crystallographic data supporting this idea. Optical UV-vis measurements were carried out as a function of pH and the presence of an oxidant agent, such as potassium ferricyanide. Crystallographic data was collected on crystals grown using the counter-diffusion technique and the pH variant of sodium formate or ammonium sulfate Triana© crystallization kits. Data sets were collected at the Stanford Synchrotron Radiation Source.

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