

FIGURES

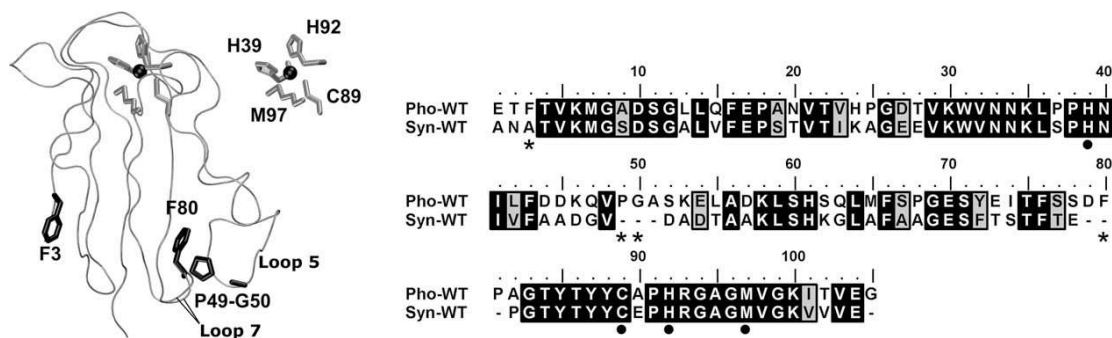


Fig. 1. Structure of Pc from *Phormidium laminosum*. Left: schematic tube representation of backbone coordinates taken from 1baw [31]. Labels mark the residues subjected to mutation, whose side-chains, Ca and N atoms are represented by sticks in black, as well as loops 5 and 7. The structure of the copper site is highlighted on the top right corner. The copper atom is represented as ball in black. Image created with VMD program [32]. Right: Clustal W [36] sequence alignment between Pho-WT and Syn-WT. Black and grey boxes correspond to identity and similarity between residues, respectively. Asterisks indicate targeted residues in this work. Solid circles label residues binding copper.

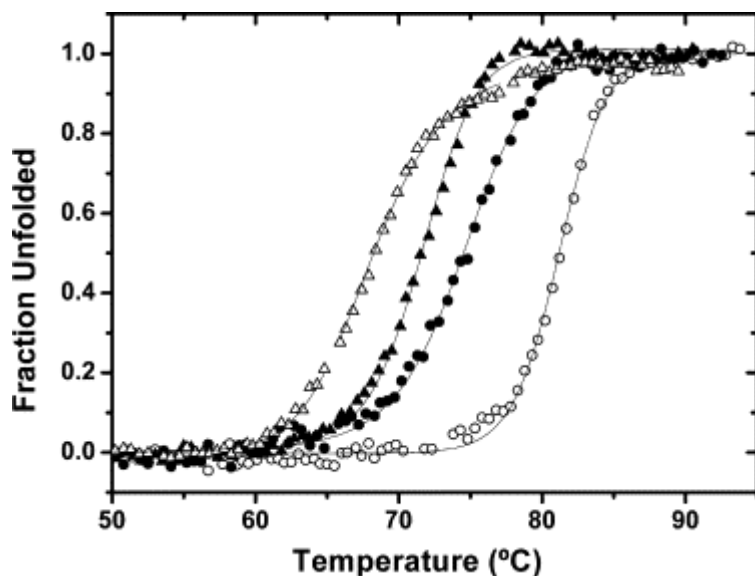


Fig. 2. Thermal denaturation curves of WT and mutant Pc from *Phormidium*. Normalised thermal unfolding curves of the Pho-WT (circles) and mutant P49G/G50P (triangles) followed by the fluorescence emission at 350 nm. Open symbols correspond to oxidised species; solid symbols represent data from reduced species.

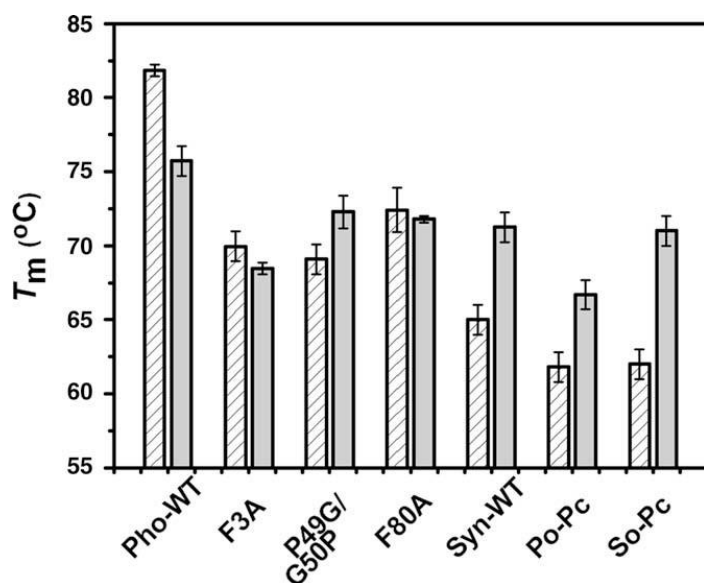


Fig. 3. T_m values for the Pcs from Phormidium (Pho-WT) and Synechocystis (Syn-WT) as well as those for the Phormidium mutants: F3A, P49G/G50P and F80A. T_m values of plant Pcs (poplar, Po-Pc [17], and spinach, So-Pc [18]) are also shown to allow comparison. Hatched bars represent the oxidised species and grey ones stand for the reduced ones.

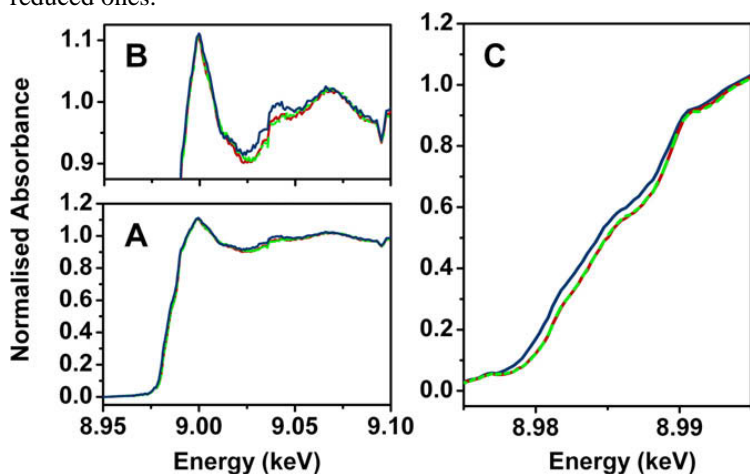


Fig. 4. Edge and XANES region of the X-ray absorption spectra of oxidised Pho-WT (blue), P49G/G50P (dashed red) and Syn-WT (green) Pcs. (A) Full X-ray absorption spectra. (B) Insight on the XANES region. (C) Details on the edge region. Energy was calibrated by aligning the maximum peak of the first derivative of the reference copper foil spectra that were recorded simultaneously to that of each Pc sample.

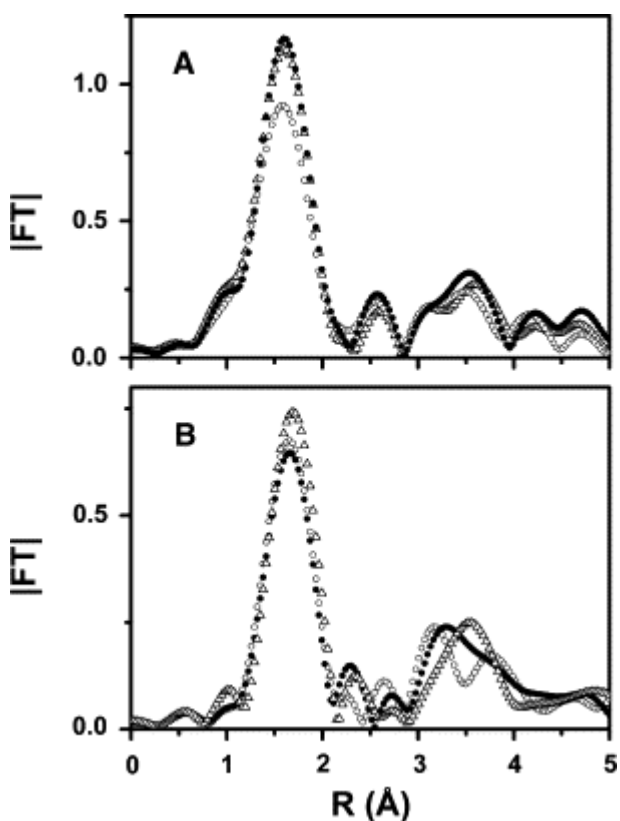


Fig. 5. Modules of the Fourier transforms of Pcs at the Cu K-edge. Open circles, solid circles and triangles correspond to spectra of Pho-WT, P49G/G50P and Syn-WT, respectively. (A) Oxidised forms and (B) reduced species.