**SUPPLEMENTARY MATERIALS**

**A Sec14-like Phosphatidylinositol Transfer Protein Paralog Defines a Novel Class of Heme-binding Proteins**

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**SUPPLEMENTARY TABLES**

**Supplementary Table 1.**

 **Soret Sfh5 Residue Heme Content**

**Protein Maximum 173,175 Pair % Total Protein Bound**

**Sfh5 404 nm H,Y 29.7\*/34.7#**

**H173A 403 nm A,Y 12.0\*/21.0#**

**H173Y 402 nm Y,Y 37.0\***

**Y175A n.d. H,A 0.48\***

**Y175F n.d. H,F n.d\*/0.01#**

**Y175H 407 nm H,H 11.6\***

**Y175F,Y68A 413 nm H,F 2.0\***

Soret peak maxima and heme content of wild-type and various mutant proteins as determined by pyridine hemochromagen assay (\*) or ICP-MS (#). Not detectable (n.d.).

**Supplementary Table 2.**

**Protein Activity (units/mg)**

**Horseradish Peroxidase 1150.0**

**Sfh5 5.2**

**Sfh5Y175H 20.2**

**Sfh5H173Y 1.9**

Peroxidase activity measurements for Sfh5 and mutant proteins. A unit of peroxidase activity is defined as that amount of activity that produces 1 mg of purpurogallin in a 20 sec incubation at pH 7.0 at room temperature. Activities were normalized to protein heme content as determined by ICP-MS and pyridine hemochromagen assays.

**Supplementary Table 3.**

 **Fe3+LA (large A) Fe3+SA (small A) Fe2+**

**Spin 5/2 5/2 2**

**mm/s 0.40 0.37 0.57**

**EQ mm/s 0.55 0.91 1.73**

**D (cm-1) 2.5 2.0 ---**

**E/D 0.072 0.067 ---**

**Ax/gnnkG -57 -121 ---**

**Ay/gnnkG -171 -58 ---**

**Az/gnnkG -216 -14 ---**

**η 0.83 0.0 ---**

**Г (mm/s) 0.48 0.45 0.37**

Mössbauer parameters used in fitting the Sfh5 and Sfh5H173A spectra are identified. Instruments were calibrated using an α-Fe foil at room temperature. Approximately 800 µl of recombinant proteins (concentration = 1.5 mM) were collected in a Mössbauer cup, frozen over liquid nitrogen and stored at -80°C until use.