

Supplementary Materials

Towards magnetism in pigeon MagR: Iron- and iron-sulfur binding work indispensably and synergistically

Yajie Zhou^{1,2}, Tianyang Tong^{3,2}, Mengke Wei^{1,2}, Peng Zhang^{2,4}, Fan Fei^{2,4}, Xiujuan Zhou^{2,4}, Zhen Guo⁵, Jing Zhang^{2,4}, Huangtao Xu², Lei Zhang^{2,4}, Shun Wang^{1,2,4}, Junfeng Wang^{1,2,4,6}, Tiantian Cai⁷, Xin Zhang^{1,2,4,6}, Can Xie^{2,4,6,*}

¹Institutes of Physical Science and Information Technology, Anhui University, Hefei, Anhui 230039, China

²High Magnetic Field Laboratory, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Science Island, Hefei, Anhui 230031, China

³Department of Anatomy, Anhui Medical University, Hefei, Anhui 230032, China

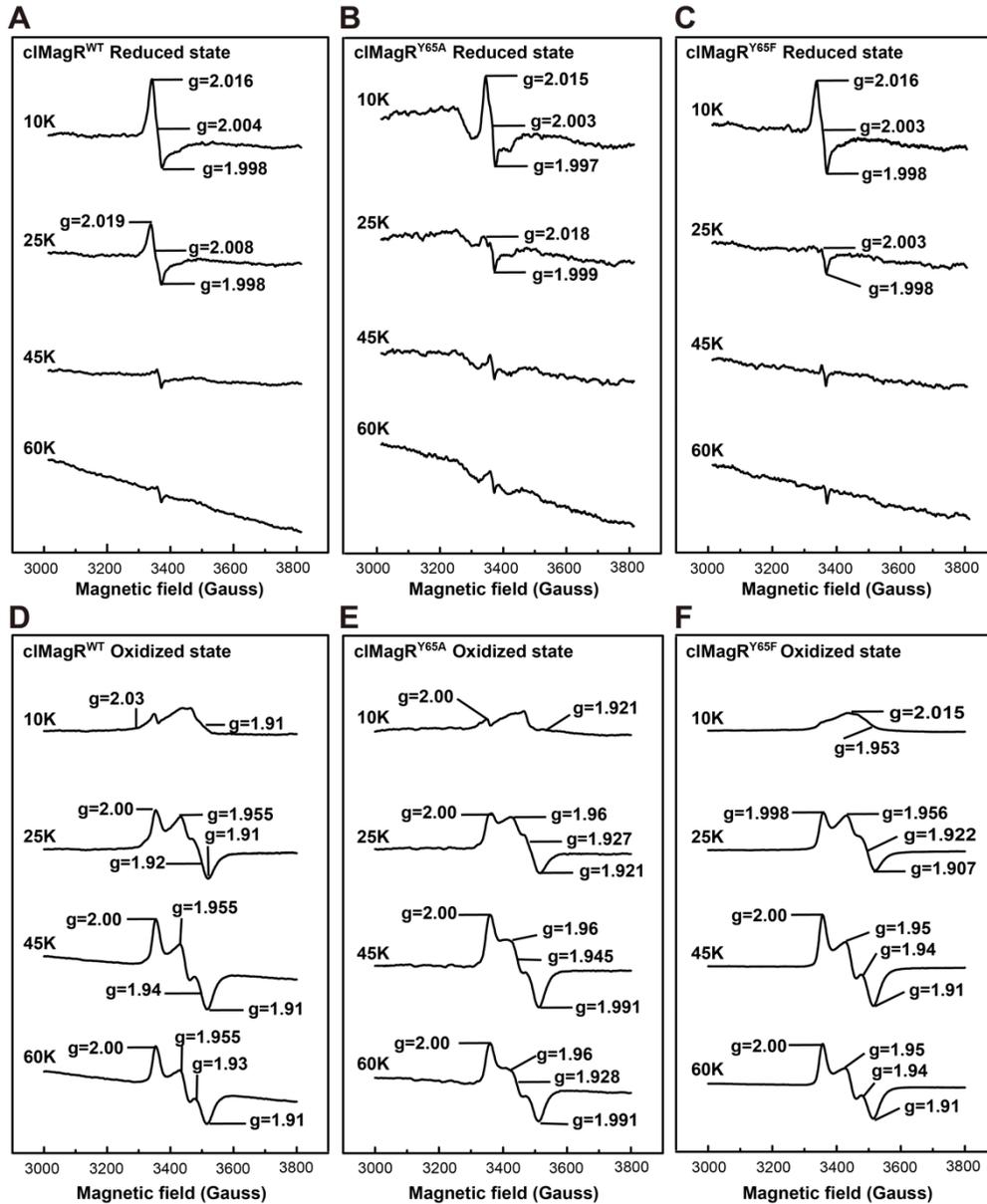
⁴Science Island Branch of Graduate School, University of Science and Technology of China, Hefei, Anhui 230036, China

⁵School of Life Sciences, Peking University, Beijing 100871, China

⁶International Magnetobiology Frontier Research Center, Science Island, Hefei, Anhui 230031, China

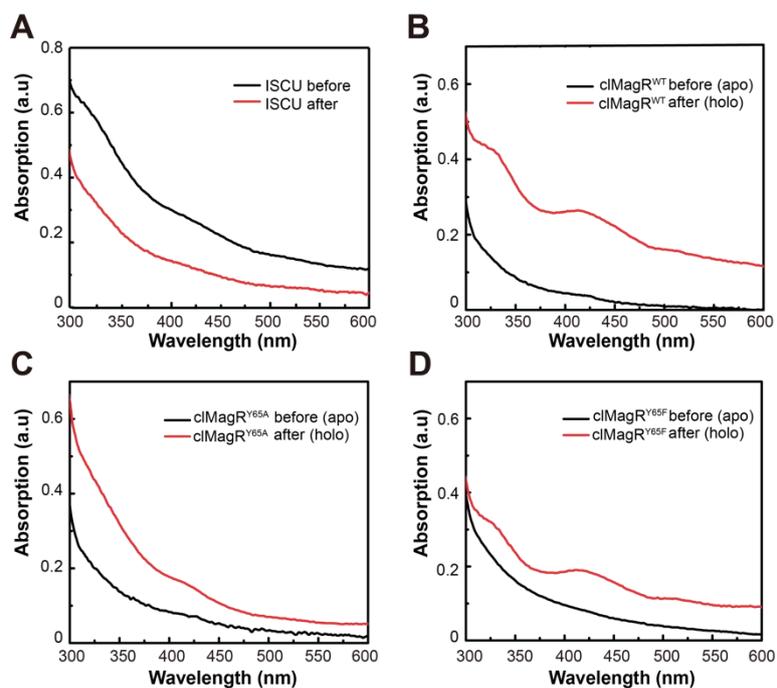
⁷Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, 250 Longwood Avenue, Boston, MA 02115, USA

*Corresponding author, E-mail: canxie@hmfl.ac.cn



Supplementary Figure S1 Y65 mutations of cIMagR do not affect iron-sulfur cluster binding

EPR characterization of cIMagR^{WT} (A, D), cIMagR^{Y65A} (B, E), and cIMagR^{Y65F} (C, F) at reduced (A-C) and oxidized (D-F) status. Samples were frozen in TBS buffer and spectra were recorded at various temperatures (10 K, 25 K, 45 K, and 60 K).



Supplementary Figure S2 Y65 mutations in cIMagR do not affect *in vitro* iron-sulfur cluster transfer from IscU

cIMagR^{WT}, cIMagR^{Y65A}, and cIMagR^{Y65F} were incubated anaerobically with holo-IscU. UV-Vis absorption spectra of repurified IscU (A) and repurified cIMagR^{WT} (B), cIMagR^{Y65A} (C), and cIMagR^{Y65F} (D) are shown as before (black lines) and after (red lines) incubation.