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RESEARCH INTERESTS

Biochemistry of iron and sulfur

- Iron-sulfur cluster proteins
- Iron homeostasis
- Metalloproteins
- Reactive sulfur homeostasis

SUMMARY

My research interest is in bioinorganic chemistry and I am intrigued by the roles of iron and sulfur in biology. I completed my PhD from Ohio State University (USA) under the supervision of Dr. James Cowan where I studied iron-sulfur cluster biogenesis pathways, with a focus on [2Fe-2S] cluster bridged protein complexes. During my first postdoctoral training at Indiana University (USA) under the supervision of Dr. David Giedroc, I investigated reactive sulfur homeostasis in the bacterial pathogen *Acinetobacter baumannii*. My current work at Collège de France is focused on [4Fe-4S] cluster dependent tRNA sulfuration enzymes.

PUBLICATIONS

2021

- Sen, S., Thompson, Z., Wachnowsky, C., Cleary, S., Harvey, S.R. and Cowan, J.A. Biochemical impact of a disease-causing Ile67Asn substitution on BOLA3 protein. *Metallomics* (2021) 13, mfab010
- Sen, S., Hendricks, A.L. and Cowan, J.A. Cluster exchange reactivity of [2Fe-2S]-bridged heterodimeric BOLA1-GLRX5. *The FEBS Journal* (2021) 288, 920-929

2020

- Zhang, Y., Sen, S. and Giedroc, D.P. Iron acquisition by bacterial pathogens: beyond Tris-catecholate complexes. *Chembiochem* (2020) 21, 1955
- Jia, M., Sen, S., Wachnowsky, C., Fidai, I., Cowan, J.A. and Wysocki, V. Characterization of [2Fe–2S]-Cluster-Bridged protein complexes and reaction intermediates by use of native mass spectrometric methods. *Angewandte Chemie* (2020) 59, 6724-6728

2019

- Yu, Z., Fenk, K.D., Huang, D., Sen, S. and Cowan, J.A. Rapid telomere reduction in cancer cells induced by G-quadruplex-targeting copper complexes. *Journal of Medicinal Chemistry* (2019) 62, 5040-5048

2018

- Sen, S., Rao, B., Wachnowsky, C. and Cowan, J.A. Cluster exchange reactivity of [2Fe–2S] cluster-bridged complexes of BOLA3 with monothiol glutaredoxins. *Metallomics* (2018) 10, 1282-1292
- Sen, S., Bonfio, C., Mansy, S.S. and Cowan, J.A. Investigation of glutathione-derived electrostatic and hydrogen-bonding interactions and their role in defining Grx5 [2Fe–2S] cluster optical spectra and transfer chemistry. *Journal of Biological Inorganic Chemistry* (2018) 23, 241-252

2017

- Sen, S. and Cowan, J.A. Role of protein-glutathione contacts in defining glutaredoxin-3 [2Fe–2S] cluster chirality, ligand exchange and transfer chemistry. *Journal of Biological Inorganic Chemistry* (2017) 22, 1075-1087

2013

- Ghosh, S., Pandey, N.K., Sen, S., Tripathy, D.R. and Dasgupta, S. Binding of hen egg white lysozyme fibrils with nucleic acids. *Journal of Photochemistry and Photobiology B* (2013) 127, 52-60