Report on Attending the FASEB Protein Lipidation Conference

I am a PhD student in the final year of my doctoral project at Imperial College London, working on the development of bifunctional molecules to induce protein *S*-acylation (also known as palmitoylation). *S*-acylation is a reversible protein post-translational modification that involves the attachment of a long-chain fatty acid (e.g., palmitic acid) to a protein cysteine via a labile thioester linkage. This modification significantly increases the affinity of the protein for cell membranes, thereby controlling processes such as protein trafficking within cells.

I was honoured to receive a BSPR Travel Bursary to attend the "FASEB SRC Protein Lipidation: Enzymology, Signalling, and Therapeutics" conference in Tucson, USA. I am deeply grateful to the BSPR Committee for this opportunity. This report reflects my experience at the conference, which was instrumental in furthering both my research and professional development.

The FASEB SRC Protein Lipidation Conference is a unique gathering of international experts in lipidation, offering in-depth discussions on the mechanisms and biological roles of lipid modifications, such as prenylation, *N*-myristoylation, and *S*-acylation. The sessions I attended provided critical insights into recent advancements in lipidation research, including X-ray and cryo-EM structures of lipidation-modulating enzymes (e.g., ZDHHC20, HHAT) and the roles of lipidation in cancer, neurodegenerative diseases, and cellular signalling.

At one of the poster sessions, I presented my most recent findings on the modulation of CDK1 *S*-acylation as a novel approach to combat cancer. This research explores the development of bifunctional molecules that induce CDK1 *S*-acylation in cells, thereby blocking its nuclear translocation and activity. My poster primarily focused on the synthesis of these bifunctional molecules, as well as the proteomics workflow I developed to enrich and identify *S*-acylated proteins from cell lysates.

During the poster session, I received insightful feedback from senior researchers and engaged in stimulating discussions about expanding the scope of my study. These conversations sparked ideas for future experiments and potential collaborations.

Attending this conference significantly advanced my understanding of protein lipidation dynamics and highlighted the relevance of my project within the broader lipidation community. The opportunity to engage with leading scientists and exchange ideas will undoubtedly shape the next steps of my research, particularly as I aim to refine the design of the bifunctional molecule to enhance its therapeutic potential.

As I near the completion of my PhD, I am increasingly focused on transitioning into the field of science policy, where I can leverage my scientific expertise to inform decision-making processes. Attending the FASEB conference not only deepened my scientific knowledge but also strengthened my belief in the value of integrating science and policy, particularly in emerging areas such as fundamental research and therapeutic development.

I would like to extend my sincere thanks to the BSPR for the grant that made my attendance at this conference possible. The knowledge, feedback, and connections I gained during this experience will be invaluable in driving my research forward.