

Reimagining Druggability using Chemoproteomic Approaches

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The Nomura Research Group is focused on reimagining druggability using chemoproteomic platforms to develop transformative medicines. One of the greatest challenges that we face in discovering new disease therapies is that most proteins are considered “undruggable,” in that most proteins do not possess known binding pockets or “ligandable hotspots” that small-molecules can bind to modulate protein function. Our research group addresses this challenge by advancing and applying chemoproteomic platforms to discover and pharmacologically target unique and novel ligandable hotspots for disease therapy. We currently have three major research directions. Our first major focus is on developing and applying chemoproteomics-enabled covalent ligand discovery approaches to rapidly discover small-molecule therapeutic leads that target unique and novel ligandable hotspots for undruggable protein targets and pathways. Our second research area focuses on using chemoproteomic platforms to expand the scope of targeted protein degradation technologies. Our third research area focuses on using chemoproteomics-enabled covalent ligand discovery platforms to develop new induced proximity-based therapeutic modalities. Collectively, our lab is focused on developing next-generation transformative medicines through pioneering innovative chemical technologies to overcome challenges in drug discovery.