Covalent "Proximity Inducing" Strategies to Modulate Immune Molecular Recognition

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Professor Anthony Rullo is an assistant professor in the Departments of Medicine and Chemistry and Chemical Biology at McMaster University. His research program focuses on mechanistic and translational chemical biology with applications in immune oncology. The lab is currently developing synthetic "proximity inducing" strategies to modulate the multi-component protein-protein interactions governing immune recognition. These strategies, employing a combination of covalent and multivalent chemical tools, can be used to generate key immunotherapeutic design principles and contribute mechanistic insight into immune cell signalling/activation processes. From a chemical tool developmental perspective, the Rullo lab is actively engaged in exploring new ligand directed-amino acid/carbohydrate bio-conjugation chemistry, and the generation of avidity/co-operativity binding synthetic scaffolds to template and control biomolecule assembly.