S02-3 **Novel Chemical Linkers for Next-Generation Antibody-Drug Conjugates (ADCs)**

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Antibody-drug conjugates (ADCs), monoclonal antibodies conjugated with highly potent drugs (payloads) through chemical linkers, are an emerging class of therapeutic agents for cancer chemotherapy. The clinical success has been demonstrated with the 4 FDA-approved ADCs and more than 60 promising ADCs in clinical trials as of 2017. As such, further advancement of this novel molecular platform could potentially revolutionize the current treatment strategies and regimens for treatment of cancers. The linker structure and antibody-linker conjugation modality critically contribute to ADC homogeneity, circulation stability, pharmacokinetic profiles, tolerability, and treatment efficacy. Despite extensive efforts to improve these parameters, most ADC linkers used to date possess linear structures and load only single payloads. The clinical potential of branched ADC linkers that can load two payloads remains unexplored because of the lack of efficient and conjugation methods for constructing homogeneous ADCs. In this symposium, I will present my group's recent effort to develop such branched linkers and efficient conjugation methods for constructing dual-loading ADCs with high homogeneity and enhanced potency. Multidisciplinary experience, approach, and collaboration are the keys to successfully advance ADC research. I will show in my talk how my postdoctoral experience at the interface of chemistry and biology allow myself to drive such complex biomedical research projects in a small academic laboratory.