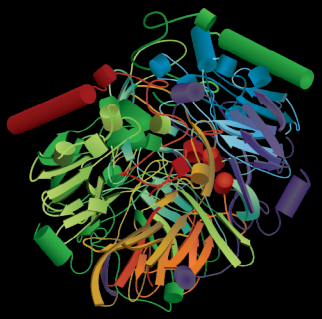

PEGS BOSTON

the essential protein engineering summit

May 1-5, 2017 • Seaport World Trade Center • Boston, MA

SPEAKER Q&A

Cambridge Healthtech Institute recently spoke with Dr. Vijay Chudasama of the University College London about his upcoming presentation, "Fine-Tuning Functional Disulfide Re-Bridging to Enable the Formation of Homogeneous Antibody Conjugates and Explore Novel ADC Avenues through PDT and Bispecifics," taking place at the **ADCs 1: New Targets, Payloads and Alternative Formats** conference to be held May 3-4, 2017 as part of the 13th Annual PEGS Boston.

Q: I understand your research interest is in the application of organic chemistry. Can you share your group's current research areas and their applications?

We are very interested and motivated by applying our knowledge and experience in organic chemistry to the area of chemical biology through the development of novel biconjugation reactions and strategies.

Q: Some of your latest research is on developing new methodologies that allow for DAR 2 ADCs. Can you elaborate on how this is done, and the benefits of this new method?

We set out to explore if we could exploit the efficient functional re-bridging of disulfides with dibromopyridazinediones as a conduit to realise the goal of controlled DAR 2 conjugate formation starting from a native antibody scaffold. We envisaged that conjugation of two bis-dibromopyridazinediones (containing a single functional modality) with an appropriate linker length (using computational analysis) could "tie up" two pairs of the 4 disulfides on an IgG1 to allow the formation of a conjugate with an overall loading of two functional modules. Fortunately, we were able to develop such a molecule, bearing a flexible PEG spacer, and it served the purpose of making DAR 2 conjugates in excellent yields and with high reproducibility.

Q: In your upcoming presentation, "Fine-Tuning Functional Disulfide Re-Bridging to Enable the Formation of Homogeneous Antibody Conjugates and Explore Novel ADC Avenues through PDT and Bispecifics" – what will be the focus of your presentation? How can this strategy/platform be applied to create novel ADCs/ bispecifics?

The focus will be on the new conjugation technologies we have developed (DAR 2 ADCs, "2 in 1" reagents for reduction and functional re-bridging, etc) and how we are using them in various fields of research, including how we can extend this to create chemistry-led bispecific platforms and PDT-based ADCs. Our latest data on next generation maleimide and pyridazinedione reagents for the site-selective modification of antibodies will be detailed (robust serum stability, in vitro selectivity, in vivo efficacy, and an update our first-in-class reagents that effect both disulfide reduction and functional re-bridging). Also presented, will be how we have been able to use our platforms to create bispecifics, and a novel strategy for making DAR 2 constructs from a native antibody scaffold.

Dr Vijay Chudasama (VC) is a Lecturer in the Chemistry department at UCL. He has won multiple prestigious prizes and awards (departmental, faculty, national and international) throughout his career such as the UCL Faculty of Mathematical and Physical Sciences Medal (2008), UK Science, Engineering and Technology (SET) Student of the Year (2008) and the Ramsay Medal (2011). Moreover, he was recently highlighted by Scientific American ("Lindau Select", 2014), the Royal Society of Chemistry ("Emerging Investigator", 2015), Forbes Magazine ("30 under 30 in Healthcare", 2015) and CNN News ("2020 Visionary", 2016), independently, to be a future leader in the field of Chemistry. VC has research interests in the development and application of novel methodologies in Chemical Biology , resulting in over 35 publications and 3 granted patents to date. Particular highlights include publications in Nature Chem. (2), Nature Commun., Chem. Sci. (2) and Proc. Natl. Acad. Sci. USA; VC is also one of the founders, and Technical Director, of UCL spin-out ThioLogics™ .

To learn more about his presentation and the PEGS Summit, visit

PEGSummit.com