

24th World Chemistry & Systems Biology Conference

&

4th International Conference on **Biochemistry & Metabolomics**

October 03-04, 2018 | Los Angeles, USA



Vaughn Smider

Scripps Research Institute, USA

Cow antibodies: Unusual biology and new opportunities

Typical mouse or human antibodies have CDR H3 loop lengths of 10-15 amino acids, which often form a flat binding surface for contact with antigen. In contrast, cows can form CDR H3 regions of over 70 amino acids, which form novel 'stalk' and 'knob' domains that protrude far from the antibody surface. These antibodies utilize an unusual diversity generating system that alters cysteine positions and disulfide bonding patterns in the knob. The functional importance of this antibody system is illustrated by recent experiments showing that cows, unlike other species, can make a broad and potent neutralizing antibody response to spike antigens of HIV.

Biography

Vaughn Smider received his MD and PhD degrees from Stanford University School of Medicine. He is currently on the faculty of the Scripps Research Institute in the Cell and Molecular Biology Department and is also the Chief Scientific Officer of Sevion Therapeutics. His research focuses on both basic biology and applied technology in the antibody field, including antibody genetics, structure, engineering, and development.

vsmider@scripps.edu

Notes: