



CHANGING LIVES IMPROVING LIFE

Special Guest Seminar

Professor Diseas

Dr. Anthony B. Schryvers

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Wednesday Jan. 20, 2016 @ 2:30 p.m. in SCIE 2315

"Improved antigens through protein engineering"

Several Gram-negative human and veterinary pathogens that are responsible for important respiratory and systemic infections reside exclusively in the upper respiratory or genitourinary tract of their host. They acquire the essential nutrient iron from the host protein transferrin via the transferrin receptor complex. This complex is composed of two proteins; transferrin binding protein A (TbpA), an outer integral membrane protein, and transferrin binding protein B (TbpB), an anchored lipoprotein that binds to iron-loaded host transferrin. TbpA and TbpB have been considered ideal vaccine targets as they are fully accessible at the cell surface and are required by the pathogen for survival within the host and to cause infection. We have adopted a structure-based protein engineering approach to design and develop improved antigens. Our experiments in pigs demonstrate that an engineered TbpB antigen is superior to the native protein and our preliminary results with hybrid TbpA-TbpB antigens show great promise. In contrast to some protein antigens in commercial vaccines, TbpB is capable of inducing an immune response that prevents colonization in humanized transgenic mice, thus can potentially eliminate the reservoir for infection.

Everyone is welcome to attend

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