Lee Smith et al., Madridge J Vaccines. 2017
http://dx.doi.org/10.18689/2638-1966.a1.006

Development of a Recombinant Fusion Protein Vaccine towards Middle Eastern Respiratory Syndrome (MERS)

Lee Smith[1]*, Ian Jones[2] and **Alexander Edwards[2]**
[1]Anglo Biopharma Ltd, United Kingdom
[2]University of Reading, United Kingdom

Anglo Biopharma Ltd. is developing a Rapid Epitope & Antigen Discovery Platform (READ) technology in collaboration with the University of Reading, UK. This technology is being used to generate candidates for use in a safe and efficacious vaccine towards Middle Eastern Respiratory Syndrome (MERS). MERS is an emerging infectious disease related to SARS that was described by the director of the World Health Organisation (WHO) as a "a threat to the entire world". The landscape of this disease and the potential for a vaccine will be discussed. Furthermore, the construction and expression of candidate vaccine constructs from the READ platform will be described, highlighting the expression of good yields of MERS fusion proteins as structurally intact and conformationally correct protective antigens. In addition, data will be discussed that has been obtained from serum analysis following candidate protein immunizations during preclinical studies. This is to understand the affinity of serum antibodies against MERS CoVneutralising epitopes known to be important for protection by end-point titer (EPT) ELISA. The utility and validity of using serum to neutralise the infectious ability of a "pseudotyped" MERS virus will also be discussed and their ability todemonstrate useful vaccine efficacy data compared to the classic downstream challenge models.

Biography:

Dr. Lee Smith's experience spans over 20 years in biopharmaceutical CMC, process, analytical, formulation pre-clinical and clinical assay development as well as experience in product characterization and regulatory submissions and interactions. He is regularly involved in applying QbD and advising on the use of DoE and data analysis for processes, formulation and assays, with a particular expertise in bioassays. He has worked on a wide range of vaccines including Dengue, influenza, meningitis B, Zika and MERS. This includes their development, optimization and validation of related processes and methods.