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Comparative analysis of *Middle East respiratory syndrome coronavirus* subunit vaccine candidates in mice

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Since *Middle East respiratory syndrome coronavirus* (MERS-CoV) emerged in 2012, MERS-CoV has spread from Middle East to Europe, America and Asia. South Korea also affected by MERS-CoV and it has been a serious threat to public health. Until today there is no available vaccine for MERS-CoV. Therefore, it is required to develop a vaccine against the MERS-CoV. It is well known that MERS-CoV spike protein (S protein) has an important role in the host cell entrance and that makes many researchers working on the subunit vaccine development using S protein. Especially receptor-binding domain (RBD) at the S protein is usually considered for making recombinant antigen proteins. Jiang et al. reported that RBD is a critical neutralizing domain and the recombinant RBD protein induced strong immune responses and neutralizing antibodies in mouse models. However, other region of MERS-CoV S protein has not been studied well relatively. Here, our group selected several parts of MERS-CoV S protein according to some properties, such as antigenicity and hydrophilicity and then we studied to compare an immunodominance of them. Six partial regions from MERS-CoV S gene were cloned into pASK-IBA7 plus vector. Then they were transformed into *E. coli* Rosetta strain and each clone was produced to soluble recombinant proteins and purified by strep-tag affinity chromatography. Each purified recombinant protein was confirmed by Western blot assay using sera from MERS patient. Immunogenicity of these proteins was characterized through animal experiment.

Biography

Young Bong Kim has completed his PhD from Sogang University in Korea and Postdoctoral studies from NIAID, NIH, USA. He is the Director of Institute of Global Infectious Disease Control at Konkuk University. He has published more than 60 papers in reputed journals.

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