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Isolation and evaluation of candidate antibodies against *Klebsiella pneumoniae* from human scFv libraries**Li Shuang Ai, Yi Jiue Tsai, and Shu Wei Wang**
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Klebsiella pneumoniae (KP), a member of the family Enterobacteriaceae, is a pathogenic gram-negative bacterium commonly found in respiratory and intestinal tract in human. It can cause devastating infections in patients with weakened immune systems. In recent years, multidrug-resistant *K. pneumoniae* (MDRKP) is rapidly increasing because of antibiotics overuse and it has been implicated in a variety of nosocomial infections. MDRKP cause a problem in the clinical treatment of patients and some references demonstrate that antibody-immune response is essential for host defense against bacterial pathogens. In this study, we've developed a monoclonal antibody for the treatment of MDRKP. The mechanism of bacteria clearance varies between antibodies and antibiotics. The efficacy of an antibody is not influenced by the antibiotic-resistant system in bacteria. The antibody clones were selected from a human cDNA library with the variable regions genes by using the phage display method. It is used for the high-throughput screening of protein interactions. The DNA encoding the protein or peptide is ligated into the pIII or structure gene, encoding either the minor or major coat protein, respectively. Phage eluted in the final step can be used to infect a suitable bacterial host, from which the phagemids can be collected and the relevant DNA sequence excised and sequenced to identify the relevant and antigen interacting monoclonal antibody. Twenty-two antibodies clones were selected high affinity with *K. pneumoniae* in phage display technology. The average KD value is up to 10⁻¹⁰. In vitro opsonophagocytic assays (OPAs) with antibody and complement to mediate opsonophagocytic killing of bacteria have been designed and developed for screening. Our results demonstrate that twenty anti-KP antibodies from human library can increase the antibody-mediated phagocytosis in *Klebsiella Pneumoniae*.

Biography

Li Shuang Ai has completed her PhD from Graduate Institute of Life Sciences, National Defense Medical Center and Postdoctoral studies from Institute of Biomedical Sciences, Academia Sinica. She has published more than 10 papers in reputed journals and has been serving as an Editorial Board Member of reputed.

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