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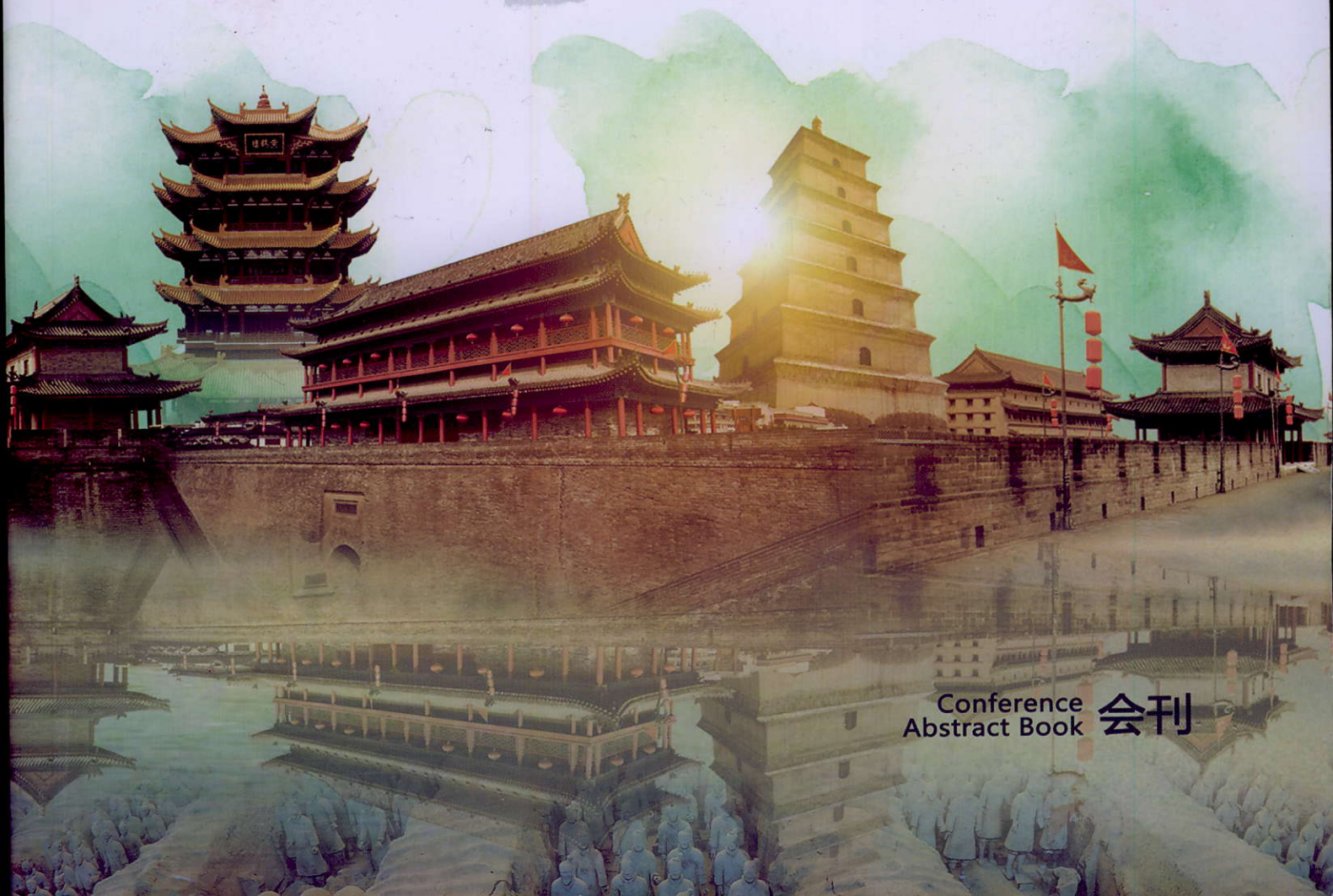
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2017 第七届国际分子与细胞生物学大会

BIT's 7th Annual World Congress of Molecular & Cell Biology-2017



Conference Abstract Book 会刊



Title: Revealing Cross-reaction Antibody between *Staphylococcus aureus* and Human Spermatozoa Protein by Biocomputational Approach to Discover Infertility Mechanism

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Abstract

Infertile women with non-specific vaginitis due to *Staphylococcus aureus* (*S. aureus*) will develop antibodies that cross-react with human spermatozoa, causing infertility. We evaluate the homology of *S. aureus* and spermatozoa proteins based on sequences and structural model through computational approach. All proteins of human spermatozoa were retrieved from UNIPROT. Modeling protein was constructed based on threading modeling. Sequence homology analysis was evaluated using BLASTP and structural comparison was done by Superpose v.1.0. Antigenicity and epitope mapping of homolog proteins were conducted using IEDB web services for comparing the potential cross-reaction antibody. The result of sequence comparison showed that there are 5 homolog proteins from human spermatozoa and *S. aureus*. Based on structural analysis, antigenicity and epitope mapping, potential candidate protein that have cross-reaction with human antibody are protein deglycase DJ-1, Sperm acrosome membrane-associated protein 4, UDP-N-acetyl hexosamine pyrophosphorylase. These proteins have similar structure and similar position of epitope that locate on surface protein. In addition the protein have high antigenicity profile. It can be concluded that the similar properties of sequence, structure, antigenicity and epitope from those proteins are possible if human antibody can cross-react with human spermatozoa protein after infecting by *S. aureus*. This mechanism may have role in infertile woman.

Biography

Dr. Muhammad Anas, Lecturer at Medical Faculty of Muhammadiyah University (UMSurabaya) of Surabaya, grew up in Indonesia and received his Medical Doctor's Degree from Airlangga University of Surabaya in 1992 and Obygn Specialist from Airlangga University of Surabaya in 2002. He was also Lecturer at Mojopahit Health Polytechnic of Mojokerto till 2011. He joined Health Science Faculty of Muhammadiyah University of Surabaya in 2012 then he joined Medical Faculty of Muhammadiyah University of Surabaya since 2016. After he obtained his Post Graduate Degree at Medical Faculty of Brawijaya University of Malang, he is a Full Lecturer at Medical Faculty of Muhammadiyah University of Surabaya.