

Crab Blood as Antimicrobial Peptide to MRSA

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UGM students keep making innovations to solve various issues in many sectors. This time, five UGM students from Faculty of Veterinary Science made an innovation of Methicillin Resistant Staphylococcus Aureus (MRSA) superbug therapy using Antimicrobial Peptide in the crab (*Scylla serrata*) blood/hemolymph. Those students are Megaria Ardiani, Dion Adiriesta Dewananda, Raden Mas Ravi Hadyan, Aditya Harinto, and Sakinah. Their innovation is called as Crab-Blood Ministration and it is available in the form of antibiotic syrup.

As we know, systemic infection by MRSA bacteria is one of the most dangerous infections in humans. The rate of contagion and mortality caused by the infection is quite high. Based on the Indonesian Health Department data, the MRSA prevalence from the hospitals is 23.5% and it is predicted to keep increasing every year.

“MRSA systemic infection can cause fatal sepsis and toxic shock syndrome. Moreover, this bacteria has a strong resistance towards most of the beta-lactam antibiotics,” said Megaria on Wednesday (16/8).

The antimicrobial peptide compounds made by Megaria and her team including scygonadin, scyllin, lysozyme, lectins, flavoenzyme, and immunoglobulin gelatin can be utilized as biomimicry medicine.



The antimicrobial peptide has a helix-amphipathic structure that is able to strongly interact with human's pathogen bacteria.

Based on the routine observation of hematological parameters, blood chemistry, and organ histopathology which is performed by Department of Clinical Pathology, Faculty of Veterinary Science UGM, the utilization of antimicrobial peptide is proven to relieve the MRSA systemic infection in three groups of treated mice. The result showed there is no abnormality in the white blood cell (leukocyte) and the kidney's functions in the mice that were given the Crab-Blood antibiotic syrup. The histopathology of the liver, lymph, and kidney also showed the absence of bleeding, congestion, and the cell nucleus damage. These results indicated that the modified crab-blood is able to relieve the MRSA systemic infection.

"This innovative antibiotic syrup is expected to be a solutive and beneficial MRSA superbug therapy for the society," she added.

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