

Pathogenicity and immunology host resistance and the immune response



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Pathogeni and Immunology Pathogeni and Immunology; Host resistance and the immune response Staphylococcus epidermidis This strain of bacteria belongs to the genus staphylococcus and is a part of the normal human flora. It is a gram positive bacterium which is arranged in clusters. It is an anaerobe which is catalase positive and can be identified easily using Baird Parker Aggar in the laboratory. It can be found in skin and lines the mucous membranes in the human beings. The bacterium normally lives in the human body and does not cause any pathology in its ecological niche until the immunity of the person is compromised. The bacterium has the ability to cause problems for people who use catheters and heart valve implants. It forms biofilms on these catheters and implants. Over time the bacteria has become resistant to antibiotics and it is because of this resistance that the bacteria has evolved in highly virulent forms. It has the ability to cause infections if removed from its ecological niche. It can also be said to be an opportunistic bacteria because it has the ability to cause pathology in people whose immunity is decreased. Variola Virus On the other hand Variola virus is a virus which causes small pox. Small pox is the only disease which has been eliminated from earth. The virus is brick shaped with a double stranded DNA. It also has an enzyme known as RNA polymerase which helps it to replicate when entering the body. Unlike Staphylococcus epidermidis the variola virus is transmitted through the external world. It does not reside in the normal flora or act as opportunistic bacteria. It can be transmitted through respiratory passageways and skin lesions unlike the bacterium staphylococcus epidermidis which resides inside the body. Staphylococcus epidermidis may not be harmful in its ecological niche whereas the Variola virus is always harmful because of the disease that it can cause. The <https://assignbuster.com/pathogenicity-and-immuneology-host-resistance-and-the-immune-response-response-essay-samples/>

bacterium staphylococcus has not been eradicated from the communities whereas Variola virus has been eradicated because of the lethal diseases that it could cause. The pathogenesis of staphylococcus epidermidis revolved around the use of catheters and heart valve implants whereas the pathogenesis of Variola virus does not involve any such thing. The virus affects the respiratory pathways and the lymph nodes at first and then causes the internal organs to be damaged. Immunity has been developed for the variola virus because it does not reside in the normal flora of the body whereas the bacteria staphylococcus epidermidis resides in the normal flora and fulfills some functions because of which it cannot be destroyed. Variola Virus can be grown in chick embryos or cell culture to be diagnosed whereas staphylococcus epidermidis is identified using Baird Parker Aggar. Both these microorganisms play a different role in their ecological niche. Variola Virus is more lethal than staphylococcus epidermidis and has been eliminated from the community. Moreover staphylococcus epidermidis also resides in the normal flora and is known as an opportunistic microorganism. References Levinson, W. (2008). Review of medical microbiology and immunology. New York: McGraw-Hill Medical. Top of Form Harvey, R. A., Champe, P. C., Fisher, B. D., & Strohl, W. A. (2007). Microbiology. Philadelphia: Lippincott Williams & Wilkins. Bottom of Form