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Introducing the Thanatobiome

submitted by [panoble](#) on August 15, 2014

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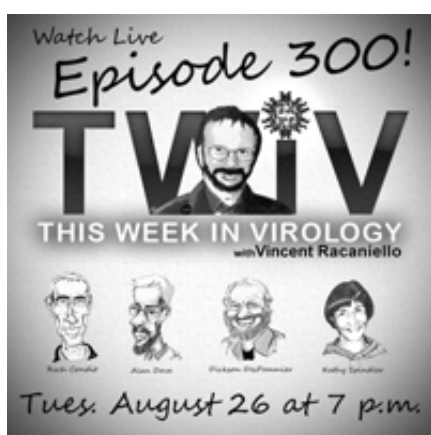
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In a healthy adult human body, most internal organs such as the brain, spleen, liver, and heart are devoid of microorganisms because the immune system keeps them in check. After human host death, however, the immune system falters and microorganisms proliferate throughout the body beginning in the ileocecal area, spreading to the liver and spleen, and continuing to the heart and brain. We refer to these microorganisms as the thanatobiome (thanatos-, Greek defn. death), which is defined as the microbiome existing in or on an animal host after it dies. Because little is known about the thanatobiome, we examined the composition and abundance of microorganisms in blood and internal organ tissue samples of cadavers. To our surprise, we found that the thanatobiome was highly similar among organ tissues from the same cadaver but very different among cadavers possibly due to differences in the elapsed time since death and/or environmental factors. The importance of this study is two-fold: it provides proof of principle that the

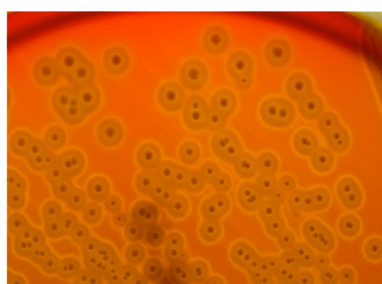


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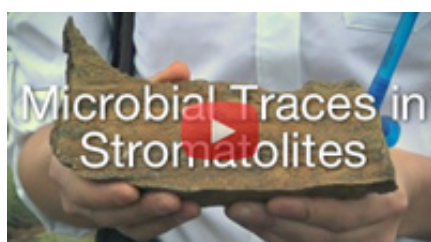


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thanatobiome may be an efficient biomarker to study postmortem transformations of cadavers; and it opens up a new field of research that completes the human life cycle. It is well known that microorganisms have co-evolved with living humans because they dominant in terms of number of cells in our bodies and play important physiological roles in health and disease. We argue that since microorganisms have co-evolved with us in life, why wouldn't they co-evolve with us in death? Clearly, basic research in the thanatobiome is needed in order to reveal the gray areas in the co-evolution of microorganisms and humans – both in life and death.

The article describing this research was published in Journal of Microbiological Methods on August 15, 2014.

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Simply Brilliant! Dr. Peter Noble has done it again! This will make a significant and profound difference in Forensic Medicine and push forward Microbiological Research! Dr. S. Geez

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