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Non-classical Roles of Microbes

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EDITORIAL

Classical roles of microbes include various aspects such as being involved in the etiology of diseases; here a large group of diseases are known (Costerton *et al*., 1999; Autenrieth, 2017; Wang *et al*., 2018). Other beneficial roles are also known including adherence and competition with harmful bacteria (Canny and McCormick, 2008; Hibbing *et al*., 2010). In the industrial world, microbes also have been engaged in different fields, particularly that of genetic engineering (Godwill, 2014).

Actually, the roles of microbes have other dimensions that may expand our horizon to understand our internal world. I would like to show our experience in the field of microbiology regarding the non-classical roles of microbes. We have found those patients with cardiac problems and who were recommended for catheterization, about 50% of them were positive for *Chlamydia pneumnia* using ELISA and PCR (Al-khatib and Al-Alawneh, 2013). Our findings and other similar findings may revolutionize the management of heart diseases.

Another non-classical role of microbes is crime related. We have studied 1000 prisoners in different Jordanian jails and found positive relationships between crime and latent toxoplasmosis, and according to this context, microbes impact our mental status and interfere with our perception of life (Shotar *et al.,* 2015a and b; 2016).

The aspects of good and bad have not become perceived from social aspects only. Our values and ethics depend indirectly on microbes. According to this context, I called these microbes as “micro-evils”, because their products are circulating in the blood and impact our nervous system (Wexler, 2007; Gandon and Vale, 2014).

I have recently found that *Candida albicans* expresses various important proteins including estrogen receptor, and BCL2, which implies that the pathogenicity of *Candida albicans* depends on these proteins from one side, and the functional barriers could be broken down and new concepts of interaction between microbes and host cells are likely to emerge (Alkhatib, 2017).

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