

12th International Congress on**Microbial Interaction and Applications of Beneficial Microbes**

July 17-18, 2017 Munich, Germany

Antibacterial assay of *Cinnamomum cassia* (Nees and Th. Nees) Nees ex Blume bark and *Thymus vulgaris* L. leaf extracts against five pathogens**Mohannad Al-Saghir**
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In this study we investigate the antibacterial activities of the *Cinnamomum cassia* (Nees and Th. Nees) Nees ex Blume bark and *Thymus vulgaris* L. leaf extracts. Five strains of bacteria, including *Bacillus subtilis*, *Enterobacter aeruginosa*, *Escherichia coli*, *Staphylococcus aureus* and *Staphylococcus epidermidis* were used in the antibacterial tests. Results from the antibacterial tests demonstrated that both plant extracts had an excellent inhibitory effect. The minimum inhibitory concentrations (MICs) of the both plant extracts were 250 µg mL⁻¹ against all tested strains. These results suggest that *Cinnamomum cassia* and *Thymus vulgaris* are beneficial to human health, having the potential to be used for medical purposes and to be utilized as anti-bacterial additives in food products.

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Imparting protection from HIV infection: Determining if inducing T cell immune quiescence modifies the immune response to recall antigens**Monika M Kowatsch¹, Lucy Mwangi², Joshua Kimani^{1,2}, Julius Oyugi^{1,2}, Julie Lajoie^{1,2} and Keith R Fowke^{1,2}**¹University of Manitoba, Canada²University of Nairobi, Kenya

Despite continual effort from the HIV prevention community, there are 2 million new HIV infections yearly suggesting new HIV prevention methods are needed. HIV targets host immune CD4⁺ T cells; decline in these cells after HIV acquisition leaves individuals susceptible to infection. Despite intense HIV exposure, some individuals remain HIV uninfected; this resistance is associated with a resting immune state, termed immune quiescence (IQ). IQ is defined as: Reduction in levels of proinflammatory cytokines, chemokines, and number of HIV target cells. Our lab conducted studies to induce IQ in women using safe and globally affordable anti-inflammatory drugs: acetylsalicylic acid and hydroxychloroquine. Both drugs decreased the number of HIV target cells in the blood and genital tract. It is unknown whether induction of IQ is detrimental to normal immune function, required to prevent or control infections. The strength and specificity of the immune response before, and after, the induction of the IQ must be determined. We hypothesize that the induction of immune quiescence using anti-inflammatory drugs will not suppress the immune response to recall antigens. To test our hypothesis, generation of an immune response using 3-day peptide pool stimulation among normal donors in addition to proliferation of T cells in response detected using peptide pool stimulation for 7 days. We found, no change in cytokine or chemokine expression at either the CVL with either drug. If this study can demonstrate that balance has been achieved, inducing IQ through anti-inflammatory drugs could be a new tool in the HIV prevention arsenal.

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