

[PS1.7]

**Gene Expression Downstream of the MyD88-Independent Pathway is essential for controlling Intracellular fate of *Burkholderia pseudomallei* in Mouse Macrophage Cell line (RAW 264.7)**

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*Burkholderia pseudomallei* is a facultative intracellular gram-negative bacterium that is capable of surviving and multiplying inside the macrophages. In this study, we showed that *B. pseudomallei* infection of mouse macrophage cell line (RAW 264.7) induced gene expression (*ikbζ*, *il-6* and *tnf-α*) downstream of MyD88-dependent pathway but failed to activate gene expression downstream of MyD88-independent pathway including *inos*, *ifn-β* and *irg-1*. Knockdown *tbk1*, an essential protein in MyD88-independent pathway, interfered with neither gene expression profile nor ability of *B. pseudomallei* to invade and replicate inside the macrophages, suggesting that MyD88-independent pathway might not be involved in activation of TLR signaling in *B. pseudomallei* –infected macrophages. However, exogenous IFN- $\gamma$  was able to upregulate gene expression downstream of the MyD88-independent pathway leading to suppression of intracellular survival of bacteria in both wild type and *tbk1* knockdown macrophages. These results indicated not only gene expression downstream of MyD88-independent pathway is essential in regulating intracellular survival of *B. pseudomallei* but IFN- $\gamma$  could also regulate these gene expressions through TBK1-independent pathway.

Keywords: Melioidosis, TBK1, MyD88 dependent pathway, MyD88 independent pathway