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## Membrane prohibitin forms a dynamic complex with p56<sup>1ck</sup> to regulate T cell receptor signaling

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## Abstract

Prohibitin is a highly conserved ubiquitously expressed protein involved in several key cellular functions. Targeting of this protein in the membrane by the virulence polysaccharide, Vi, of human typhoid-causing pathogen, *Salmonella enterica* serovar Typhi (*S. Typhi*), results in suppression of IL-2 secretion from T cells activated through the T-cell receptor (TCR). However, the mechanism of this suppression remains unclear. Here, using Vi as a probe, we show that membrane prohibitin associates with the src-tyrosine kinase, p56<sup>lck</sup> (Lck), and actin in human model T cell line, Jurkat. Activation with anti-CD3 antibody brings about dissociation of this complex, which coincides with downstream ERK activation. The trimolecular complex reappears towards culmination of proximal TCR signaling. Engagement of cells with Vi prevents TCR-triggered activation of Lck and ERK by inhibiting dissociation of the former from prohibitin. These findings suggest a regulatory role for membrane prohibitin in Lck activation and TCR signaling.