13. Summary

It is demonstrated in this study that SEB initiates the cascades of events in macrophages, which then influence T cell effector function. These cascades of events include the activation of G protein, TACE, EGFR, p38MAPK and NFκB and expression of TNFα in macrophages. SEB sequentially activates these molecules, as inhibition of one molecule inhibits all other downstream molecules and TNF-α production. Modulation of signaling cascade in macrophages modulates SEB induced IL-2 production and T cell proliferation.

SEB induced TSS is also affected by the inhibition of these signaling intermediates in BALB/c mice. Administration of these inhibitors to mice prevented the TSS in some cases and produced resistance against TSS in some cases i.e. administration of some inhibitors abrogated TSS in mice while administration of some inhibition produced resistance against SEB induced TSS. Inhibitors which prevented the induction of TSS in BALB/c mice were G protein and TACE inhibitor and the inhibitors which produced resistance against TSS induction were EGFR and p38MAPK inhibitor.

SEB induces lot of IL-2 production and T cell proliferation (Uchiyama et al., 1989) and thereby induces TSS in BALB/c mice. IL-2KO mice are resistant to SEB induced TSS, indicating the importance of IL-2 in TSS induction.