CONCLUSION
Conclusion

The study suggests Th1/Th2 modulatory and immuno-adjuvant potential of TCE in an experimental system. Following are key findings:

A. Immunomodulatory Study:

- Modulatory effect of CD3^+ percentages in sensitized conditions suggesting its effects on T lymphocytes activation.
- Up-regulation of Th1 (IFN-gamma) and Th2 (IL-4) cytokines coupled with IL-2 activation suggesting its mixed effects on Th1/Th2 immunity.
- Higher DTH response and Antibody titre results suggested that TCE had immunomodulatory activity on specific cellular and humoral immune responses to SRBC sensitized animals and supporting mixed Th1 and Th2 up-regulating potential of TCE.

B. Applicability Study:

TCE was found more efficacious in contrast to QS in terms of significant increase in protective immunity against diphtheria as evident by higher neutralizing antibodies leading to higher survival and morbidity even with higher dilution of the vaccine. Further, TCE not only significantly increased the level of Th1 cytokines IFN-gamma, but also strongly enhanced the Th2 cytokine IL-4 level in DPT immunized animals, supporting the dual Th1 and Th2 potentiating activity. Whereas, treatment with QS enhanced Th1 up-regulating profile in similar conditions.

Taken together with its natural origin, without toxicity reports, and long standing use as folk medicine, TCE may be used as safe and efficacious Th1/Th2 modulatory adjuvant.