

# Objectives

**Objective 1: To investigate the association of *VTCN1* polymorphisms and *VTCN1* and *NRD1* transcript levels with vitiligo susceptibility in Gujarat population.**

- a) Genotyping of *VTCN1* rs10923223 and rs12046117 polymorphisms in vitiligo patients & controls.
- b) Estimation of *VTCN1* and *NRD1* transcript levels from PBMCs of vitiligo patients & controls.
- c) Estimation of *VTCN1* and *NRD1* transcript levels from skin of vitiligo patients & controls.

**Objective 2: To determine *VTCN1* and *NRD1* protein expression in vitiligo patients and controls.**

- a) Estimation of *VTCN1* protein expression in the skin samples of vitiligo patients & controls.
- b) Estimation of plasma soluble *VTCN1* (s*VTCN1*) levels in vitiligo patients and controls.
- c) Estimation of plasma soluble *NRD1* levels in vitiligo patients and controls
- d) Correlation of s*VTCN1* levels with *NRD1* in vitiligo patients.

**Objective 3: To carry out immunophenotypic analysis of *VTCN1* in vitiligo patients**

- a) Estimation of *VTCN1* expression on different immune cell subpopulations from blood of vitiligo patients.
- b) Estimation of *VTCN1* expression on different immune cell subpopulations from skin of vitiligo patients.

**Objective 4: To study the effect of pro-inflammatory & anti-inflammatory cytokines on *VTCN1* expression and STAT3 activation.**

- a) Assessment of the *VTCN1* expression and activation of STAT3 upon cytokines' (TNF- $\alpha$ , IFN- $\gamma$  and IL-10) treatment in THP1 cell line.