

DETECTION OF WISE GENE IN *MYCOBACTERIUM TUBERCULOSIS*

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Background

WISE is a novel secreted protein, which can modulate Wnt signaling pathway and BMP (Bone morphogenetic protein) signals. WISE is expressed in the surface ectoderm, in which Wnt signaling plays multiple roles. WISE was isolated as a secreted protein capable of interacting with Wnt co-receptor (LRP6). It either enhances or inhibits the Wnt pathways depending on the cellular context and it inhibits the BMP signals by binding to BMP ligands. Very little is known about the Wise, which has been cloned from mouse, *Xenopus*, and human. WISE is also called as USAG-1 or Ectodin.

Objective

The aim of the present study was to detect Wise protein or homologous protein to Wise in *Mycobacterium tuberculosis*

Methods

In this study PCR based assay was used to detect the presence of Wise gene in *M. tuberculosis*. H₃₇RV was the used as the standard. Extraction of DNA was carried out by CTAB method from 35 *M. tuberculosis* cultures originated from patients' clinical samples. DNA amplification was performed, targeting Wise gene by using forward primer W2F(5' GCTTTTAAGAATGATGCCAC-3') and reverse primer W2R(5'-GTGACCACGGTGATTTTGTA-3').

Results

Out of the 35 DNA samples submitted to PCR reactions for the Wise gene, 9 samples were amplified with the unique fragment of ~ 800 bp along with the H₃₇RV standard DNA.

Conclusion

With this preliminary study we can confirm the presence of Wise gene in *M. tuberculosis*. This is a specific method to detect Wise gene in *M. tuberculosis* and is the first study in the world which tested the Wise gene in *M. tuberculosis*.