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Detection of uterine sensitization associated gene-1 or WISE Gene in *Mycobacterium tuberculosis*

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USAG-1 (Uterine Sensitization Associated Gene-1) also called WISE (Wnt modulator In Surface Ectoderm) or Ectodin, gene name SOSTDC1, is a secreted monomeric 26 – 32 KDa glycoprotein of the sclerostin family of BMP (Bone morphogenetic protein) antagonists. USAG-1 or 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 USAG-1, which has been cloned from mouse, *Xenopus* and humans. The aim of this study was to detect USAG-1 gene or homologous protein to USAG-1 or WISE in *Mycobacterium tuberculosis*. DNA amplification was used to detect the presence of USAG -1 gene in *M. tuberculosis* and H₃₇RV was used as the positive control strain and distilled water as the negative control. DNA extraction was carried out by the standard CTAB method from biochemically confirmed 50 *M. tuberculosis* cultures originated from patients' sputum samples. DNA amplification was performed targeting USAG-1 gene by using gene specific forward primer W2F (5'-GCTTTTAAGAATGATGCCAC-3') and reverse primer W2R (5'-GTGACCACGGTGAT TTTGTA-3').

Of the 50 DNA samples submitted to PCR reactions for the USAG-1 or WISE gene, 11 samples were amplified with the unique fragment of ~ 800 bp along with the H₃₇RV standard DNA. With this preliminary study, the presence of USAG-1 or WISE gene in *M. tuberculosis* was confirmed. This is a specific method to detect USAG-1 gene in *M. tuberculosis* and also the first study in the world which tested the USAG-1 or WISE gene in *M. tuberculosis*.

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