

ABSTRACT

THESIS: Ectopic expression of TAL-1 increases resistance to TNF α -induced apoptosis in Jurkat cells via changes in the NF- κ B signaling pathway

STUDENT: Bethany R. Lucas

DEGREE: Master of Science

COLLEGE: Science and Humanities

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TAL-1, ectopically expressed in 60% of T-cell acute lymphoblastic leukemia (T-ALL) patients, may contribute to poor chemotherapy response. This research sought to determine if TAL-1 influences expression of proteins involved in the NF- κ B signaling pathway and thus, resistance to cell death. NF- κ B, IKK γ , and TRAF-2 expression levels were found to be TAL-1-dependent. Cell death levels were higher in staurosporine-treated cells compared to tumor necrosis factor α -treated or dual-treated cells. TAL-1, NF- κ B, IKK γ , and TRAF-2 expression levels were elevated in tumor necrosis factor α -treated cells and reduced in staurosporine-treated or dual treated cells compared to untreated cells. These results suggest TAL-1 influences expression of proteins involved in the NF- κ B signaling pathway, thus inducing an anti-apoptotic response in the cell.