Acute Lymphoblastic Leukemia (ALL) is the most common type of childhood cancer and the risk of developing ALL is highest in children younger than five years old. ALL is a type of cancer which is characterized by the growth of abnormal lymphocytes (white blood cells) which begin in the bone marrow and spread throughout the body. Modern chemotherapy has a high success rate, but is associated with high toxicity to healthy cells, side effects, and a risk of relapse of the disease. Cancer immunotherapy has emerged as a promising treatment option for many cancers. Natural Killer (NK) cells are the first line of defense and the function of cells are governed by the balance between the activating and inhibitory receptors. Our lab has cloned the cell surface receptors 2B4, CS1, and LLT1. NKp30 and NKp46 are also important receptors that are part of the natural cytotoxicity receptors (NCR). The purpose of this study was to evaluate the expression of these receptors in an ALL cell line, ALL-1045 which was generated from a pediatric ALL patient. Total RNA was isolated from ALL-1045 cells and cDNA was synthesized by reverse transcriptase polymerase chain reaction (RT-PCR). Using specific primers 2B4, CS1, LLT1, NKp30, and NKp46 were PCR amplified and mRNA expression was analyzed. The cell surface expression of the receptors was analyzed by flow cytometry. Increased mRNA expression of 2B4 and CS1 was observed in ALL-1045 cells. Interestingly, only CS1 showed increased cell surface protein expression as compared to the other receptors. The results and data from this experiment can provide information to further understand the function of these receptors which can help develop a better treatment option for children with ALL.