EFFECTS OF PROTON PUMP INHIBTORS ON THE GROWTH OF JURKAT T LYMPHOCYTES. Emma L. Jones, Caroline M. Sampson & Randall D Reif, University of Mary Washington. Proton pump inhibitors, or PPI’s, have been shown to be toxic to Jurkat T lymphocytes, but it is unknown whether this is due to apoptosis, programmed cell death, or simply ceasing of growth. PPI’s kill cancer cells by inhibiting the movement of H+ (protons) out of the cell, leading to a buildup of acidity within the cell that slows their growth and can cause the cell to die. Studies were conducted in which doxorubicin, a known chemotherapeutic, was used as a positive control to compare to several PPI’s including dexlansoprazole, esomeprazole, and omeprazole. Each drug was allocated into well plates at a concentration of 10 micromolar respectively along with Jurkat cells. The concentrations of cells were observed over the course of 48 hours to determine the effect of these drugs on cell growth. This could provide new insights into how PPI’s prevent cancer cell growth. Author contact, ejones23@umw.edu.