Leukemia can be defined as a group of cancers that usually begins in the bone marrow and the white blood cells are not fully developed or high numbers of immature white blood cells formation. Leukaemia can be of different types, e.g. acute lymphoblastic leukemia (ALL), acute myelogenous leukemia (AML), acute promyelocytic leukemia (APL), chronic lymphocytic leukemia (CLL) and chronic myelogenous leukemia (CML). It is the most common type of cancer in children, with three quarters of leukemia cases in children being the acute lymphoblastic type. In 2012, leukemia developed in 352,000 people globally and caused 265,000 deaths. The exact cause of leukemia is unknown. Different kinds of leukemia are believed to have different causes. Treatment may involve combinations of chemotherapy, targeted therapy, radiation therapy, and bone marrow transplant. Recently a potato lectin was purified at our laboratory that inhibited tumor growth through the induction of apoptosis in Ehrlich ascites carcinoma cells [1]. In the present study, the lectin agglutinated U937 (human myeloid leukaemia) cells strongly, at a minimum concentration of 6 µg/ml. MTT assay showed the toxicity of the potato lectin against those cells. The lectin was serially diluted with RPMI-1640 medium containing Pen-Strep and fetal bovine serum in 96 wells flat bottom titer plate. Then previously cultured U937 cells in RPMI-1640 medium were added to each well and incubated for 24h at 37°C with 5% CO2. Cells without lectin were used as control. The lectin inhibited U937 cell growth significantly (30%) and in a dose dependent manner.


Keywords: Leukemia, lectin, agglutination