Dendritic cells are immune cells that act as messengers between the innate and adaptive immunity. Their main functions is to process antigen material and present it on the surface to other cells of the immune system, thus functioning as antigen presenting cells and are seen as the most potent population executing this function. In the experiments with the mononuclears from the peripheric blood of healthy persons, the effect of the anti-cancer preparation NSC-631570 (UKRAIN) on the phenotypic and functional properties of dendritic cells was studied. The most prominent induction of the expression of the cell surface molecules CD86 and HLA-DR was achieved with NSC-631570 at the lowest and highest concentration, 0.6 μg/mL and 10 μg/mL, respectively. Lipopolysaccharide as standard comparative agent induced similar increase of the cell surface receptors. The proliferation index of the incubated lymphocytes was used as the indicator of the dendritic cells activity. After addition of NSC-631570 to the incubated dendritic cells, the lymphocyte proliferation index increased from 22.6% up to 32.30% at 0.6 μg/mL or 29.34% at 10 μg/mL respectively. These values are similar to the one of 31.82%, i.e. proliferation index achieved at the incubation of lymphocytes with the phytohemagglutinin. The authors concluded dendritic cells incubated with NSC-631570 are strong stimulators of the lymphocyte proliferation. They postulate also NSC-631570 can take an important part in the immune therapy of cancer.