The first publication on the using NSC-631570 in malignant melanoma describes the full remission in a patient with metastases to the lung. A long lasting remission (more than 10 years without recurrence) has been observed in a patient with malignant nodular melanoma after the treatment with NSC-631570. At the beginning of the NSC631570 therapy liver metastases were present and melanin was excreted with urine. The effects of NSC-631570 alone and in combination with the pathogen associated molecules (PAM) on the cell cycle and apoptotic induction were compared in two melanoma cell lines MM-4 and MM-4M2 with different metastatic properties (cell division rate, hematogenous metastazing, sensitivity to the TNF-induced apoptosis). Apoptosis induction and cell viability were analyzed using trypan blue exclusion test, morphological criteria, DNA gel electrophoresis and flow cytometry. Cell cycle distribution of tumor cells was estimated by flow cytometry. The therapy with NSC-631570 induced apoptosis in both melanoma cell lines in a dose dependent matter. The cell line with higher metastatic potential was more sensitive to NSC-631570. In the cell line with low metastatic potential, combined use of NSC-631570 and PAM induced apoptosis more effectively.