It has recently been shown that the serum level of melanoma-inhibitory protein (MIA) provides useful information for the therapy and follow-up of patients with malignant melanoma. Previously, S100 β has been described as a useful tumor marker for malignant melanoma. In this study, we compare the significance of the two markers in follow-up, therapy outcome and prognosis by measuring MIA and S100 β serum levels in 50 melanoma patients. Serum levels were measured in patients with malignant melanomas of stages I–IV with at least 3 time points of measurement. Serial MIA and S100 β measurements were obtained from 32 patients with stage IV disease in parallel to chemotherapy and from 18 patients with a history of stage I and stage II disease during follow-up. The response to chemotherapy in stage IV disease and relapse of melanoma during follow-up correlated with changes in MIA and S100 β serum levels. In comparison, MIA revealed slightly higher specificity and sensitivity. In conclusion, both markers are useful for detection of progression from localized to metastatic disease during follow-up and for monitoring therapy of advanced melanomas.Copyright © 2000 S. Karger AG, Basel