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## Prognostic implications of p21 (Waf1/Cip1) immunolocalization in multiple myeloma

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## **ABSTRACT**

Protein p21 (Waf1/Cip1) plays a critical role in controlling the cell cycle especially as a check point of G1 and is intimately associated with important cellular activities including differentiation, senescence, tumorigenesis, and apoptosis. In the present study, we examined the expression of p21 in multiple myeloma (MM) cells for prognostic evaluation. The immunocytochemical localization of p21 could be categorized into nuclear and cytoplasmic types. The nuclear-type p21 localization was correlated with the severity of MM and the expression of proliferating cell nuclear antigen and p53. Patients with the nuclear-type p21 localization survived significantly shorter than those with the cytoplasmic-type localization. Thus, the present study suggests that p21-immunolocalization can be a useful prognostic marker of MM.

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