



Expression of B7-H3 in cancer tissue during osteosarcoma progression in nude mice

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ABSTRACT. Immune cells might participate in the ontogenesis of osteosarcoma. B7-H3 is a new discovered T cell co-stimulatory molecule that was found to be overexpressed in malignant tumors. We aimed to investigate the dynamic expression level of B7-H3 in nude mice with osteosarcoma. A nude mouse osteosarcoma model was successfully established. B7-H3 expression and distribution changes in the early, middle, and late phases of osteosarcoma formation after tumor implantation were observed. Reverse transcription-polymerase chain reaction and western blot analyses were applied to measure the B7-H3 mRNA and protein dynamic changes. Confocal microscopy and immunohistochemistry were used to determine B7-H3 localization and CD3+ T cell expression, respectively, in osteosarcoma tissue. B7-H3 mRNA and protein levels fluctuated during the process of osteosarcoma formation in the nude mouse model. Expression levels were lower in the early and middle phases, while B7-H3 mRNA and protein were overexpressed in the late stage. Accordingly, CD3+ T cell numbers in the early, middle, and late phases in osteosarcoma tissue were 93 ± 13 , 92 ± 12 , and 46 ± 15 , respectively; they can be seen to have decreased significantly in the late stage ($P < 0.05$). Overall, our results indicated that the B7-H3 expression level is correlated with tumor

volume and severity; therefore, it might serve as a tumor biomarker for osteosarcoma.

Key words: Osteosarcoma; Nude mice; B7-H3; T cell