



Receptor for advanced glycation end-products (RAGE) is overexpressed in human osteosarcoma and promotes the proliferation of osteosarcoma U-2OS cells *in vitro*

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ABSTRACT. Osteosarcoma (OS) is an aggressive cancer of the long bones, and usually affects children and young adults. The receptor for advanced glycation end-products (RAGE) has recently been recognized as an oncogenic receptor that binds to different ligands, and promotes the progression of various cancers. However, little is known about the association between RAGE and the pathogenesis of OS. In this study, we first examined the expression of RAGE in OS tissues using immunohistochemical staining, western blotting, and reverse transcription quantitative polymerase chain reaction. We then determined the influence of the overexpressed RAGE on the proliferation of U-2OS cells *in vitro*. The results showed that RAGE was overexpressed in OS tissues compared with peritumor tissues, at both the mRNA and protein levels, and there was a significant association between overexpressed RAGE and clinicopathological characteristics, such as clinical stage and

distant metastasis. Moreover, the overexpression of RAGE in U-2OS cells significantly promoted their proliferation *in vitro*. In conclusion, this study indicated that RAGE is overexpressed in OS tissue and promotes the proliferation of U-2OS cells. These data imply that RAGE promotes the growth of OS, and is a potential diagnostic biomarker and therapeutic target for the disorder.

Key words: RAGE; Osteosarcoma; Proliferation; U-2OS cells