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### **Matrix metalloproteinases in carcinoma of unknown primary.**

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### **Source**

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### **Abstract**

#### **BACKGROUND:**

The purpose was to study proteolysis-related molecules, matrix metalloproteinase-2 (MMP-2) and MMP-9 and tissue inhibitor of metalloproteinases-1 (TIMP-1), in carcinoma of unknown primary (CUP).

#### **METHODS:**

Paraffin-embedded tumor material from 75 patients diagnosed with CUP was used. Tumor histologies were adenocarcinoma (77%), undifferentiated carcinoma (19%), and squamous cell carcinoma (4%) and patients were categorized into favorable (62%) and unfavorable (38%) subsets. The tissue expression of MMP-2, MMP-9, and TIMP-1 was assessed by use of specific monoclonal antibodies and evaluated by means of a visual staining score. The expression of molecules studied was analyzed against clinicopathological data.

#### **RESULTS:**

MMP-2 was found expressed in 69% (strong expression in 49%), MMP-9 in 49% (strong in 36%), and TIMP-1 in 79% (strong in 44%) of studied cases. The expression of MMP-2 correlated positively with MMP-9. TIMP-1 was significantly higher in unfavorable compared with favorable tumors and was associated with a shorter survival of patients (7.5 vs. 12 mos). No other associations were detected.

#### **CONCLUSIONS:**

MMP-2, MMP-9, and TIMP-1 are widely expressed in CUP, suggesting an essential role of proteolysis in these tumors. TIMP-1 may be considered a possible marker of poor prognosis in CUP patients.

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