Milk fat globule-epidermal growth factor-factor VIII (MFG-E8) is a secreted glycoprotein that promotes clearance of apoptotic cells by bridging phosphatidylserine on apoptotic cells and integrin αvβ3/5 on professional phagocytes. Recently, high expression of MFG-E8 has been reported in various types of cancer in humans. Apoptotic figures are frequently found in the surgical specimens of oral squamous cell carcinoma (SCC) and we have often observed apoptotic carcinoma cells engulfed by macrophages or even by neighboring carcinoma cells. Thus we hypothesized that MFG-E8 might promote engulfment of apoptotic carcinoma cells by living carcinoma cells and that MFG-E8 expressed by carcinoma cells could contribute to tumor progression. The aim of this study was to elucidate the biological role of MFG-E8 in oral SCC. Fifty-three surgical specimens of oral SCC were used for immunohistochemistry for MFG-E8. Also, we examined its function using MFG-E8-overexpressing cultured SCC cells. Most of the cases had MFG-E8-positive SCC cells and the expression of MFG-E8 was correlated with such clinicopathological features as tumor size, pathological stage, locoregional recurrence, scattering invasion pattern and SCC cell figures engulfing apoptotic SCC cells. The MFG-E8 staining was enhanced in apoptotic SCC cells, some of which were apparently engulfed by the neighboring SCC cells. Transient MFG-E8 overexpression in SCC cell lines increased invasiveness and engulfment of apoptotic cells. Therefore we have demonstrated that MFG-E8 promotes tumor progression in oral SCC and that it might be involved in the clearance of apoptotic SCC cells by living SCC cells.

Biography
Manabu Yamazaki is a Board Certified Oral Pathologist, Assistant Professor at the Division of Oral Pathology, Niigata University Graduate School of Medicine and Dentistry working in research and practice of oral pathology.

manyamaz@dent.niigata-u.ac.jp