Overexpression of Histone Deacetylase 1 in Gastric Cancer tissues

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Background Although HDACs appear to play a crucial role in carcinogenesis, the expression of HDACs in primary human cancer tissues cells has not yet been reported.

Methods In this study, we investigated the expression level of HDAC1 in 25-paired primary human gastric cancer (GC) tissues through semi-quantitative RT-PCR and immunoblot analysis. HDAC1 expression pattern was also topologically examined through immunohistochemistry.

Results Overexpression of HDAC1 was detected in 68% (17 of 25) GC tissues, and the relative density of HDAC1 mRNA in GC tissue was increased 1.8-fold than the normal counterpart (P<0.01). The elevated expressions of HDAC1 protein were also detected in 61% (11 of 18) GC samples, showing an increased mRNA level of HDAC. The overexpression of HDAC1 were predominantly localized in the nuclei of neoplastic cells, whereas normal glandular epithelial cells revealed mild expressions. Embolic tumor cells were also strongly positive for HDAC1.

Conclusion Thus, the present study clearly demonstrates that HDAC1 is overexpressed in GC and probably plays some roles during gastric carcinogenesis. Further mechanistic study on the role of histone deacetylases in gastric cancer is warranted and in progress.