学 位 論 文 の 要 旨

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主論文の題名

Significant intratumoral heterogeneity of HER2 status in gastric cancer: a comparative study among IHC, FISH, and DISH

主論文の要旨

The assessment of human epidermal growth factor receptor 2 (HER2) status is crucial for selecting patients with gastric cancer who may benefit from HER2-targeted therapy. Accurate assessment using biopsy specimens is important for patients with advanced-stage cancer. Intratumoral heterogeneity of HER2, however, is a major challenge in HER2 testing. Here, we aimed to examine whether assessment of HER2 status could be accurately performed with currently used methods, i.e., immunohistochemistry (IHC), fluorescence in situ hybridization (FISH), and dual-color in situ hybridization (DISH). HER2 status was evaluated in 108 biopsy tissues from patients with gastric adenocarcinoma and 70 matched surgical specimens by IHC, FISH, and DISH. HER2 amplification was detected in 11 (10.2%) out of 108 biopsy specimens. IHC and FISH results were well correlated, and FISH and DISH results were consistent for all cases. The overall concordance rate of HER2 status between biopsy tissues and surgical specimens was 91.4%. All six discordant cases were false negative on biopsy; of these cases, five showed HER2 heterogeneity on surgical resection. Assessment of the HER2 status of biopsy tissues could predict the status of the whole tumor; however, a proportion of these cases may be discordant because of intratumoral heterogeneity.