

Mutational and expressional analyses of *MYD88* gene in common solid cancers

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ABSTRACT

Aims and background. Myeloid differentiation primary response gene 88 (MYD88) is a protein involved in hematopoietic differentiation and innate immunity. Recent studies revealed *MYD88* mutation in hematological malignancies and MYD88 over-expression in some solid cancers. The aim of this study was to see whether alterations of MYD88 protein expression and somatic mutation of *MYD88* gene are features of common solid cancers.

Methods. We analyzed *MYD88* mutation in 45 gastric, 45 colorectal, 45 breast, 45 hepatocellular, 45 prostate and 45 lung carcinomas by single-strand conformation polymorphism (SSCP). We also analyzed MYD88 protein expression in 60 gastric, 60 colorectal and 107 prostate carcinomas by immunohistochemistry.

Results. In the immunohistochemistry results, MYD88 protein was highly expressed in gastric (75%), colorectal (80%) and prostate (83%) cancers. However, MYD88 expression was significantly different among normal tissues (gastric: 58%, colon: 100%, prostate: 86%). MYD88 expression was significantly increased in gastric cancer cells compared with normal cells, whereas it was decreased in colorectal cancer cells compared with normal cells. There were no somatic mutations of the *MYD88* gene in gastric, colorectal, breast, hepatocellular, prostate and lung carcinomas.

Conclusions. Our data indicate that MYD88 overexpression might be a feature of many solid cancers, but MYD88 expression in normal cells differs depending on the organs. The data suggest that a gain of MYD88 expression in gastric cancers might play a role in cancer pathogenesis by activating oncogenic functions of MYD88.

Key words: MYD88, mutation, expression, colon cancer, gastric cancer.

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