Abstract: It becomes possible to establish a novel diagnostic method for micro-cancer by modulating the signals from the lesion, if lesions can be labeled with substances which can be detected by video endoscopy. The authors have already succeeded in synthesizing indocyanine green (ICG) derivatives for a fluorescent labeling substance which emits near-infrared rays. Before the antibodies labeled by these substances can be used, it is necessary to establish a method of vital immunohistochemical staining. So, we investigated the responses of antibodies exposed to non-fixed fresh tissue specimens as a basic study on vital immunohistochemical staining. The responses of fresh esophageal and gastric specimens (biopsied or surgically resected) to immunohistochemical staining with anti-epithelial membrane antigen (EMA) antibodies under various conditions using the ABC method were examined. These tissue specimens were stained immunohistochemically, and incubated with anti-EMA antibodies for 10 and 30 minutes (esophagus), and for 60 and 120 minutes (stomach) at 37°C. These results suggest that vital immunohistochemical staining is possible under optimum conditions. If an infrared fluorescent endoscopy catching this excited fluorescence can be developed, it will be possible to establish a new endoscopic diagnostic method on the basis of vital immunohistochemical staining.


Keywords: micro-cancer, diagnostic method, indocyanine green (ICG) derivatives, vital immunohistochemical staining
Materials

The Journal of Medical Investigation Vol. 46 1999

Methods

The Journal of Medical Investigation Vol. 46 1999
Chromatic responses of biopsied and resected specimens to the stain under different sets of conditions

While chromatic responses of biopsied and resected specimens to the stain under different sets of conditions remain unclear, the results from the basic study on vital immunostaining by S. Hayashi et al. suggest potential applications for improving diagnostic accuracy. Further research is needed to fully understand these responses and their implications for clinical practice.
**Distribution of EMA in control sections and non-fixed fresh specimens**

S. Hayashi et al. Basic study on vital immunostaining.
S. Hayashi et al. **Basic study on vital immunostaining**

...