

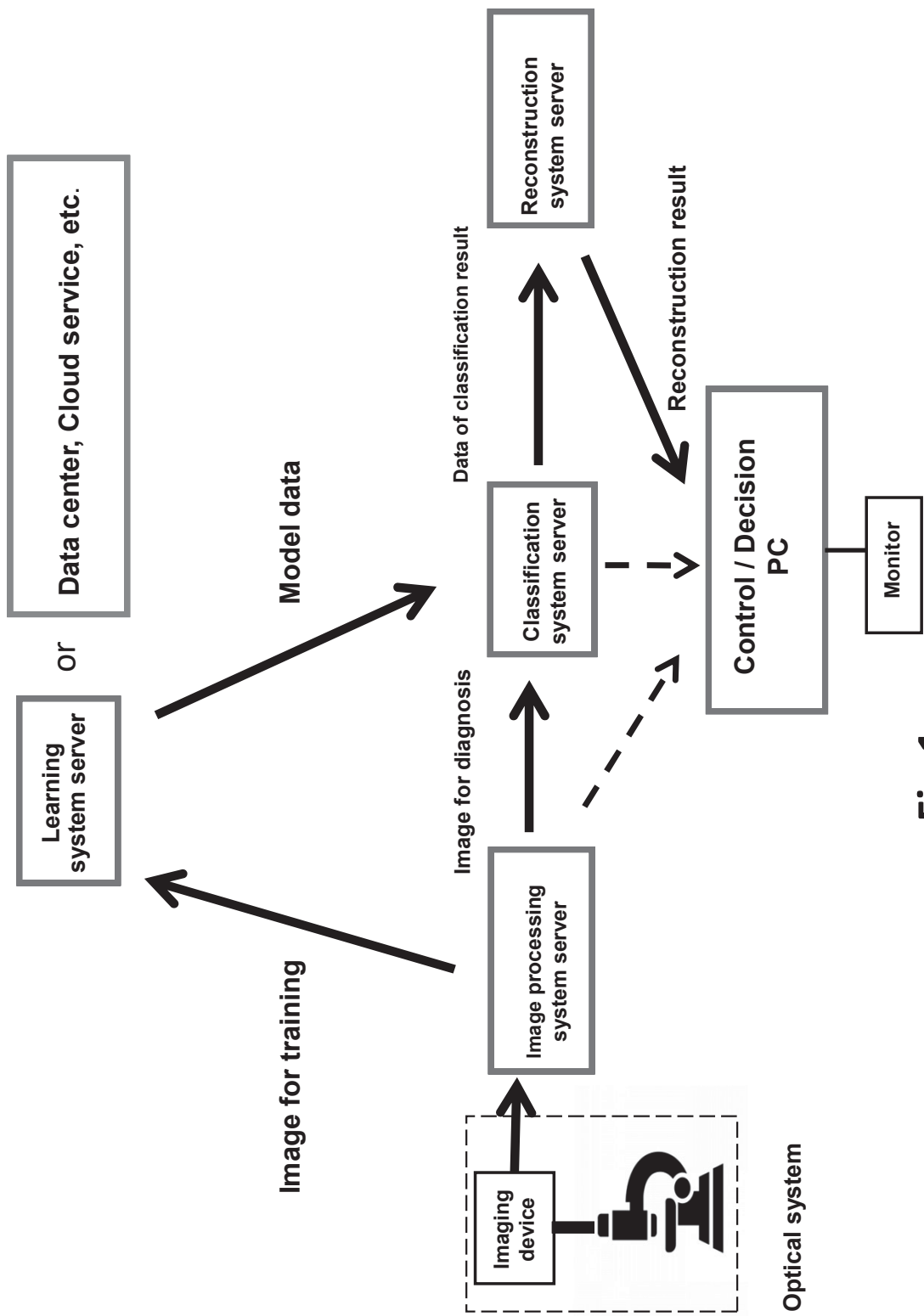


Fig.1

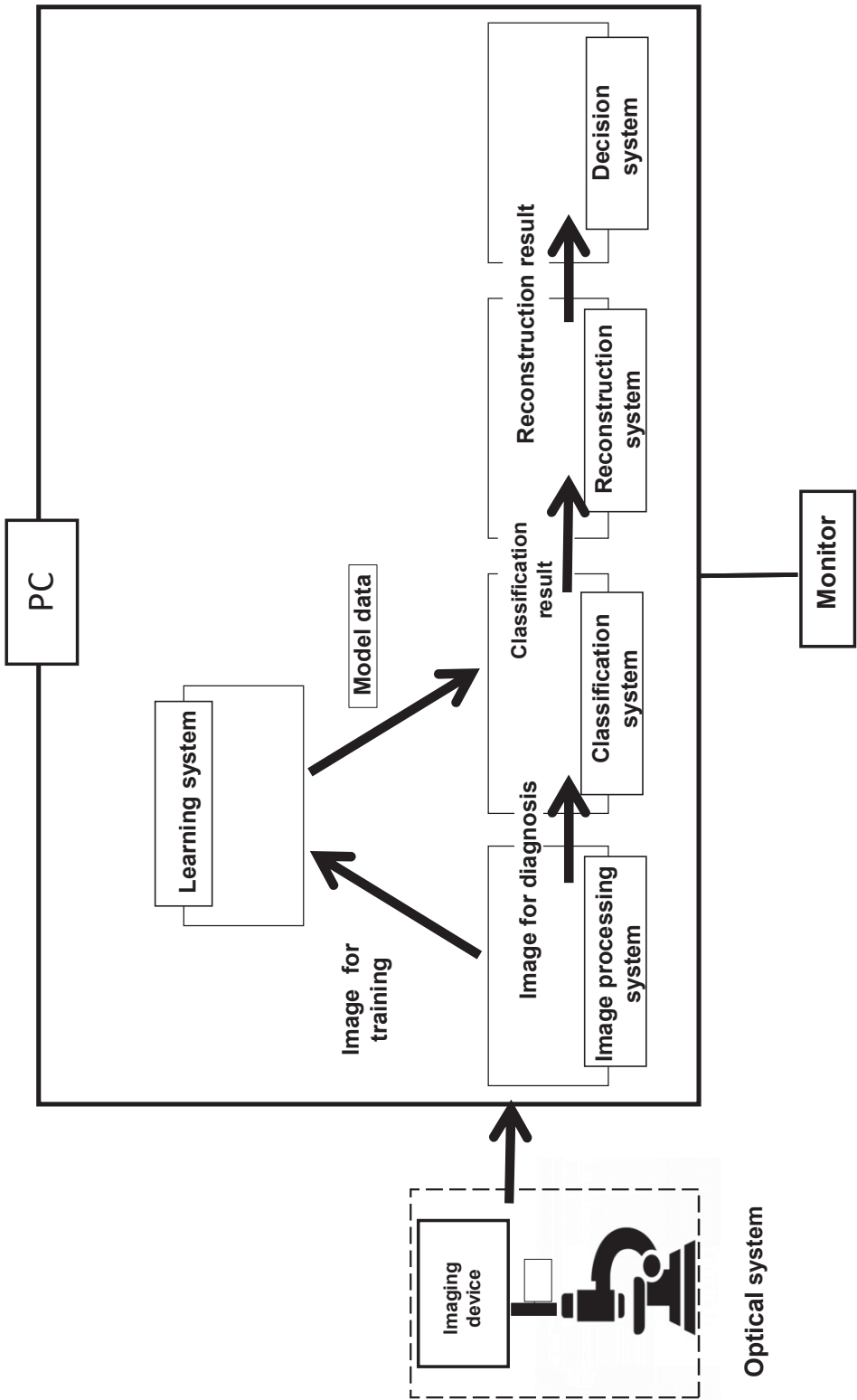


Fig.2

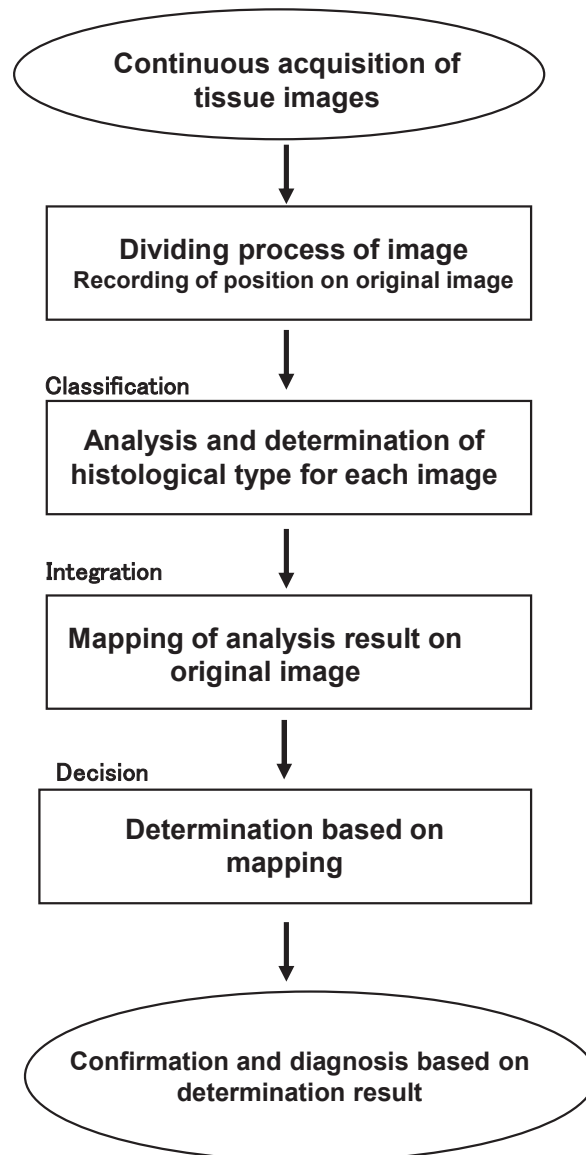


Fig.3

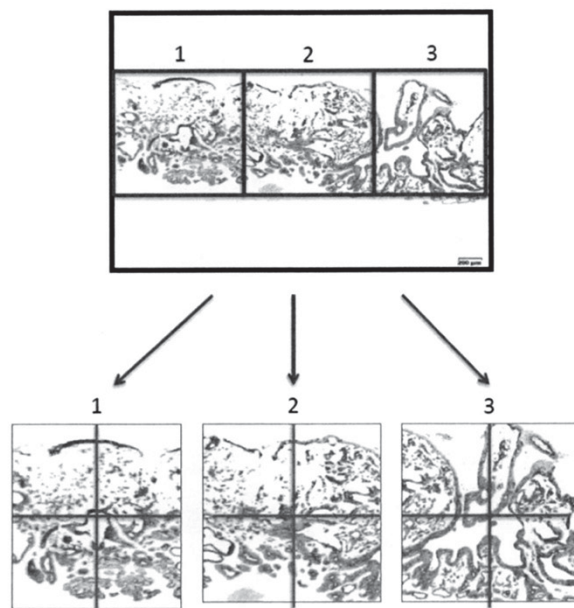


Fig.4

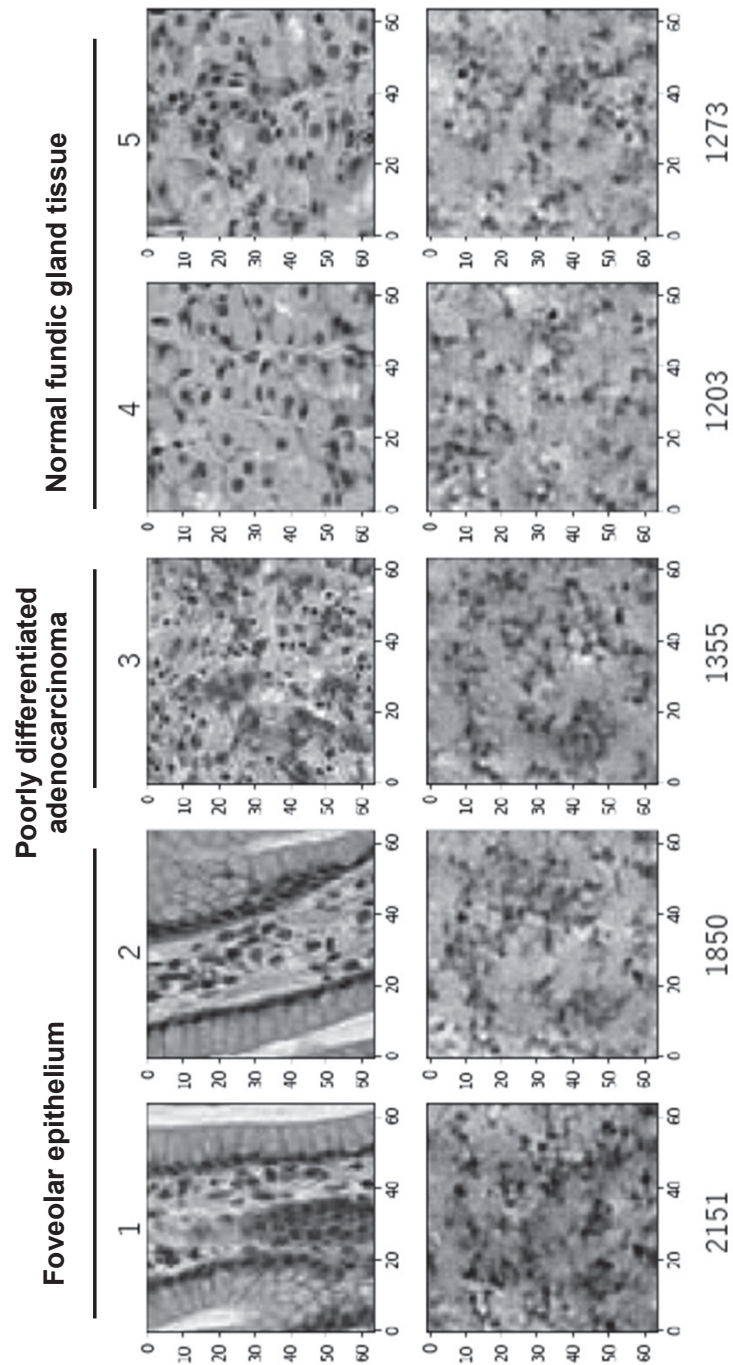


Fig.5

Image data set; Cytokeratin (IHC) staining of gastric cancer tissue

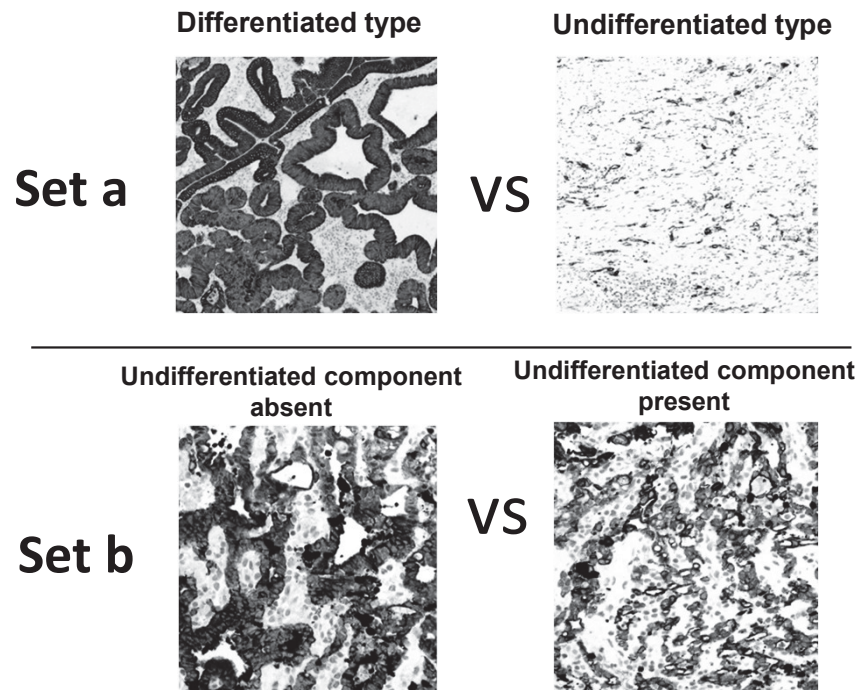
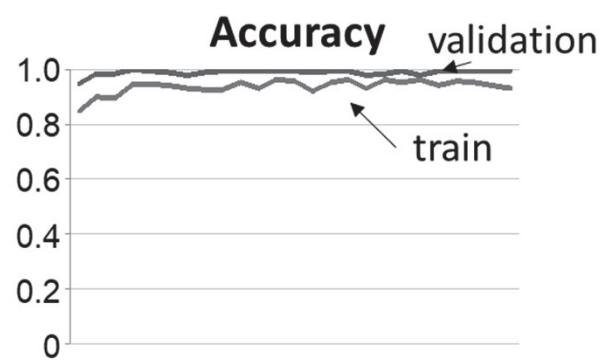


Fig.6

Learning from Scratch



Fine tuning

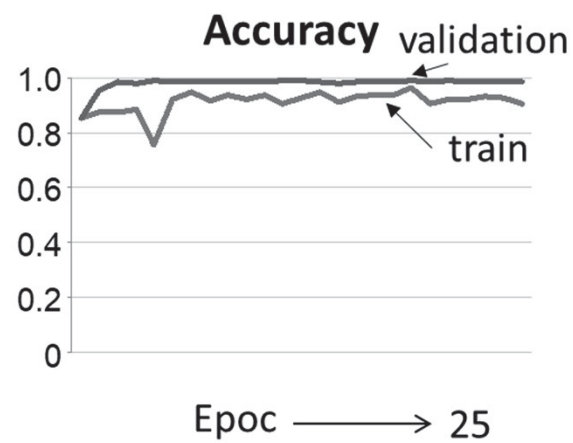
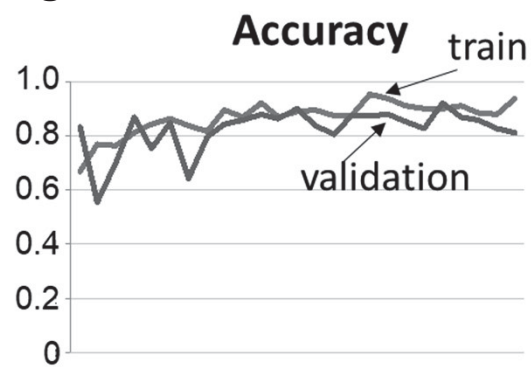


Fig.7

Learning from Scratch



Fine tuning

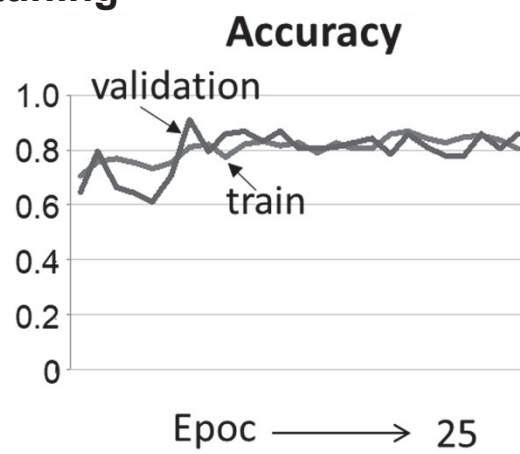
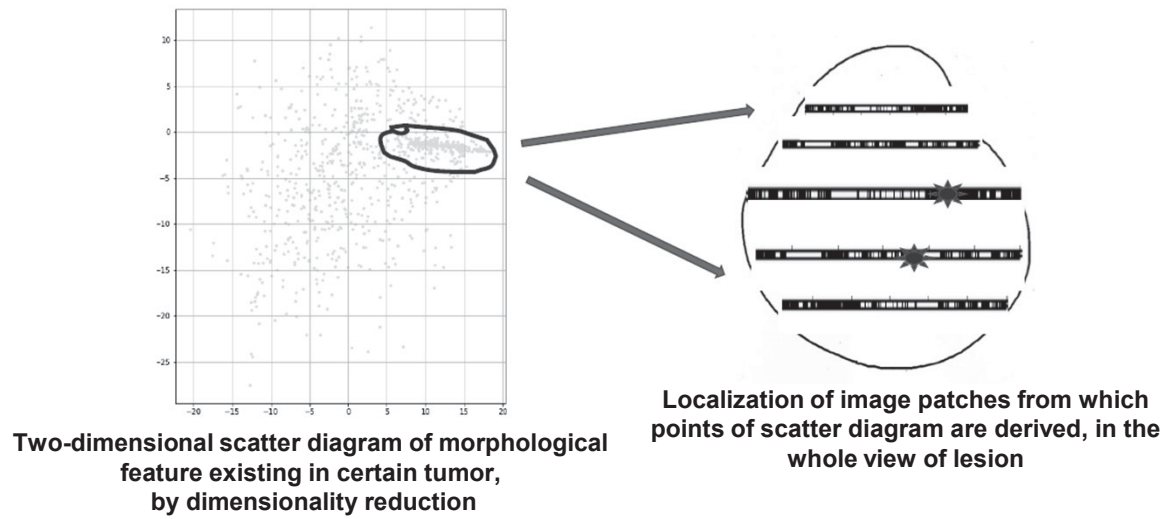
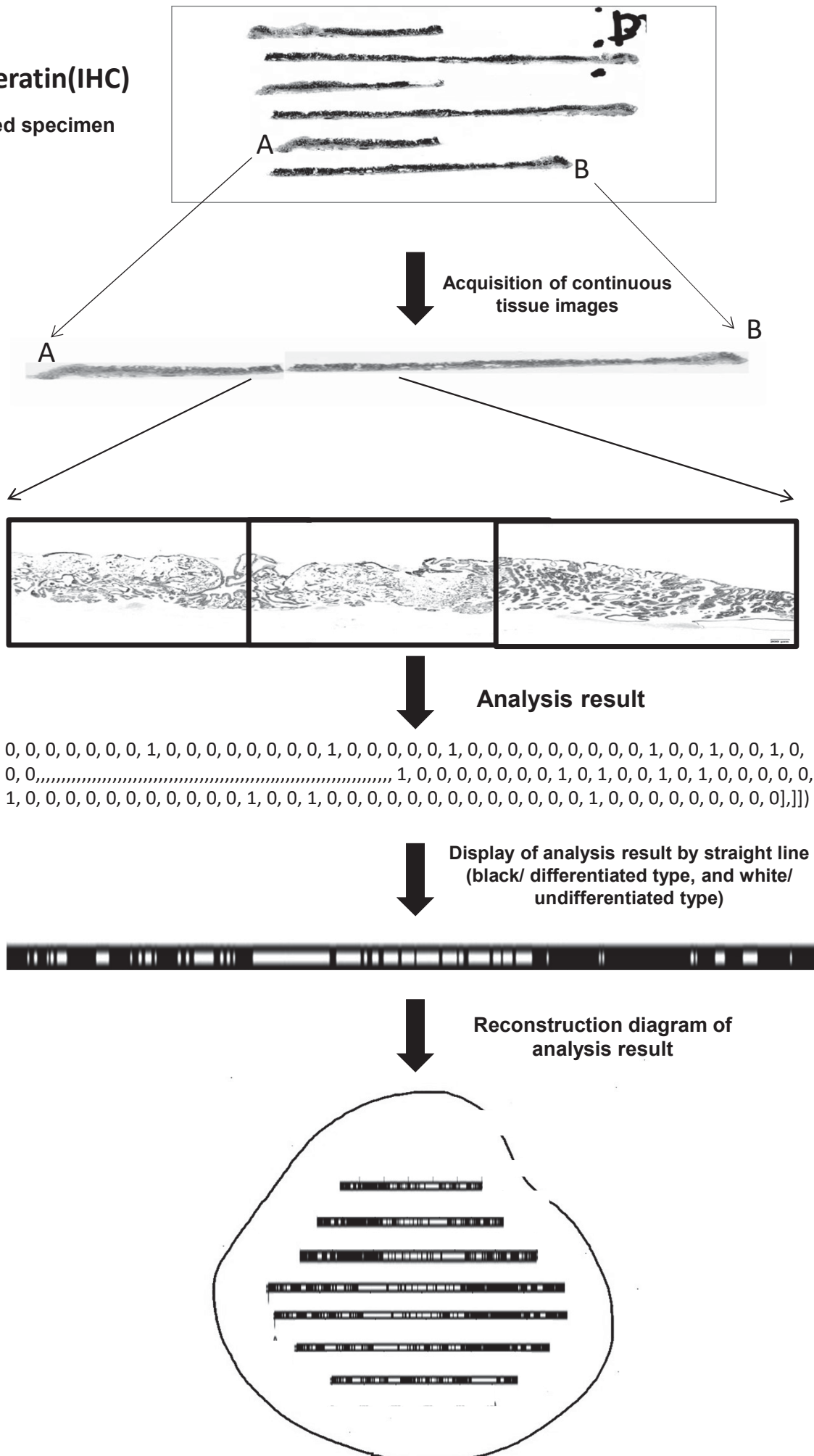


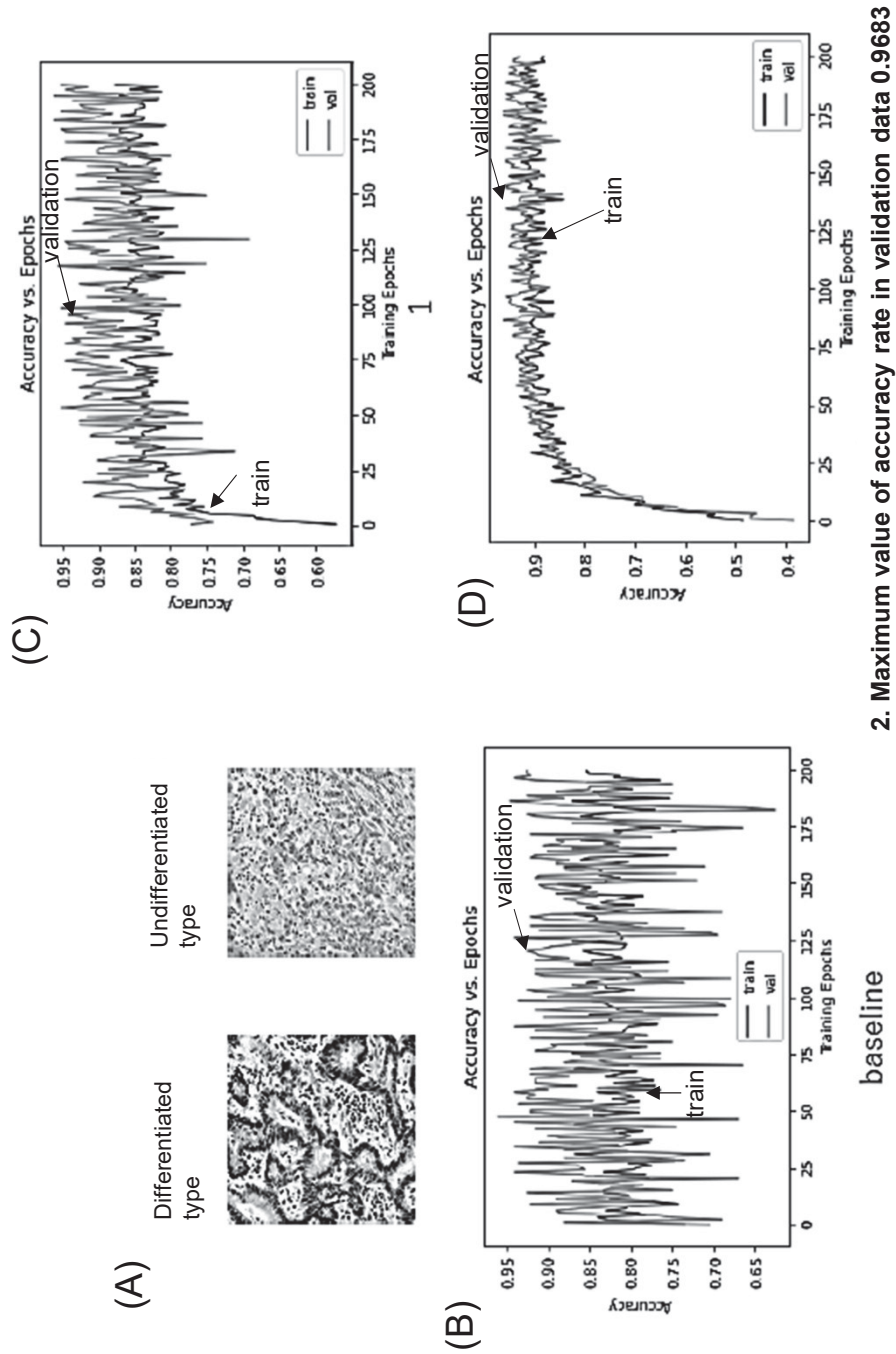
Fig.8

**Fig.9**

Cytokeratin(IHC)

Stained specimen

**Fig.10**



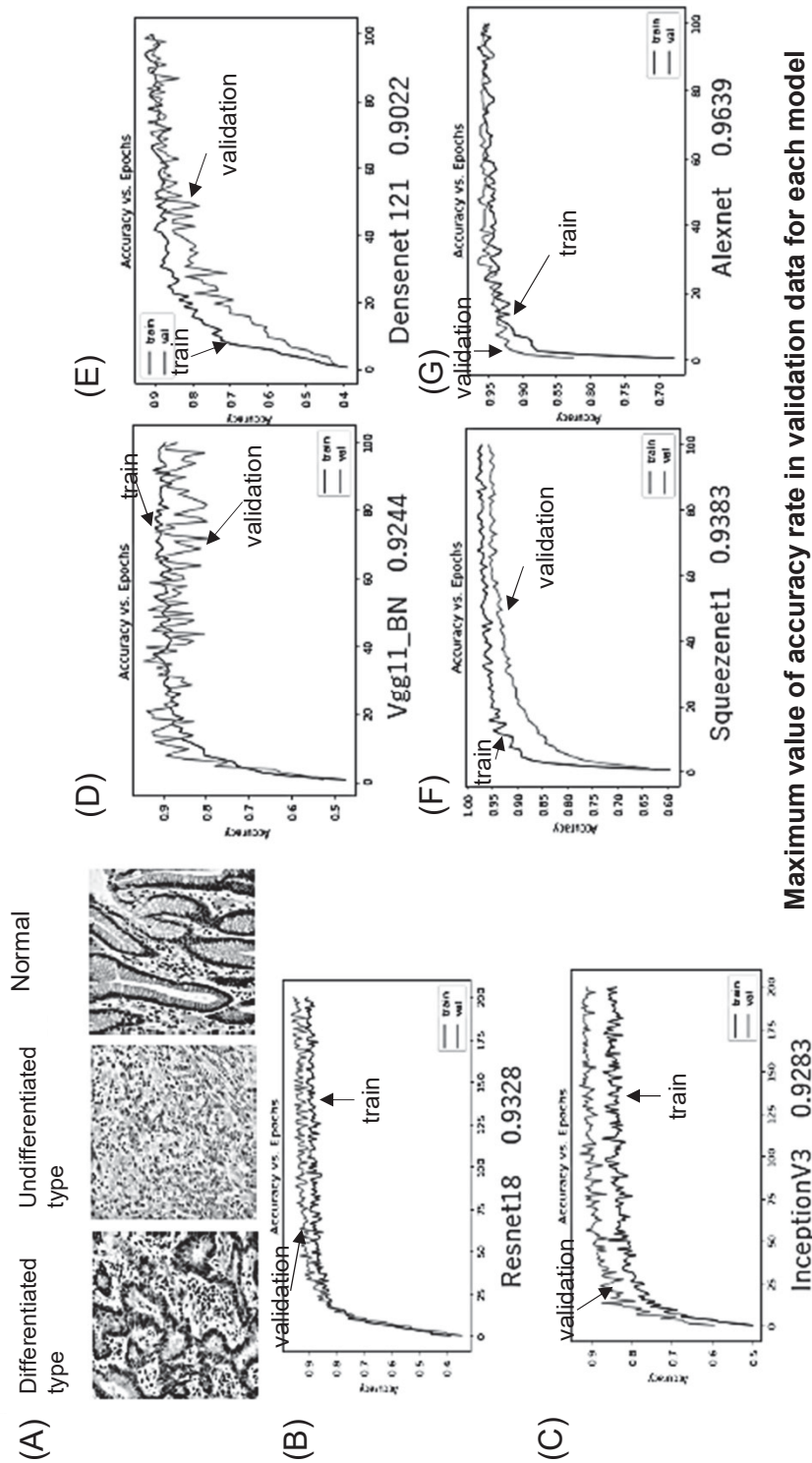
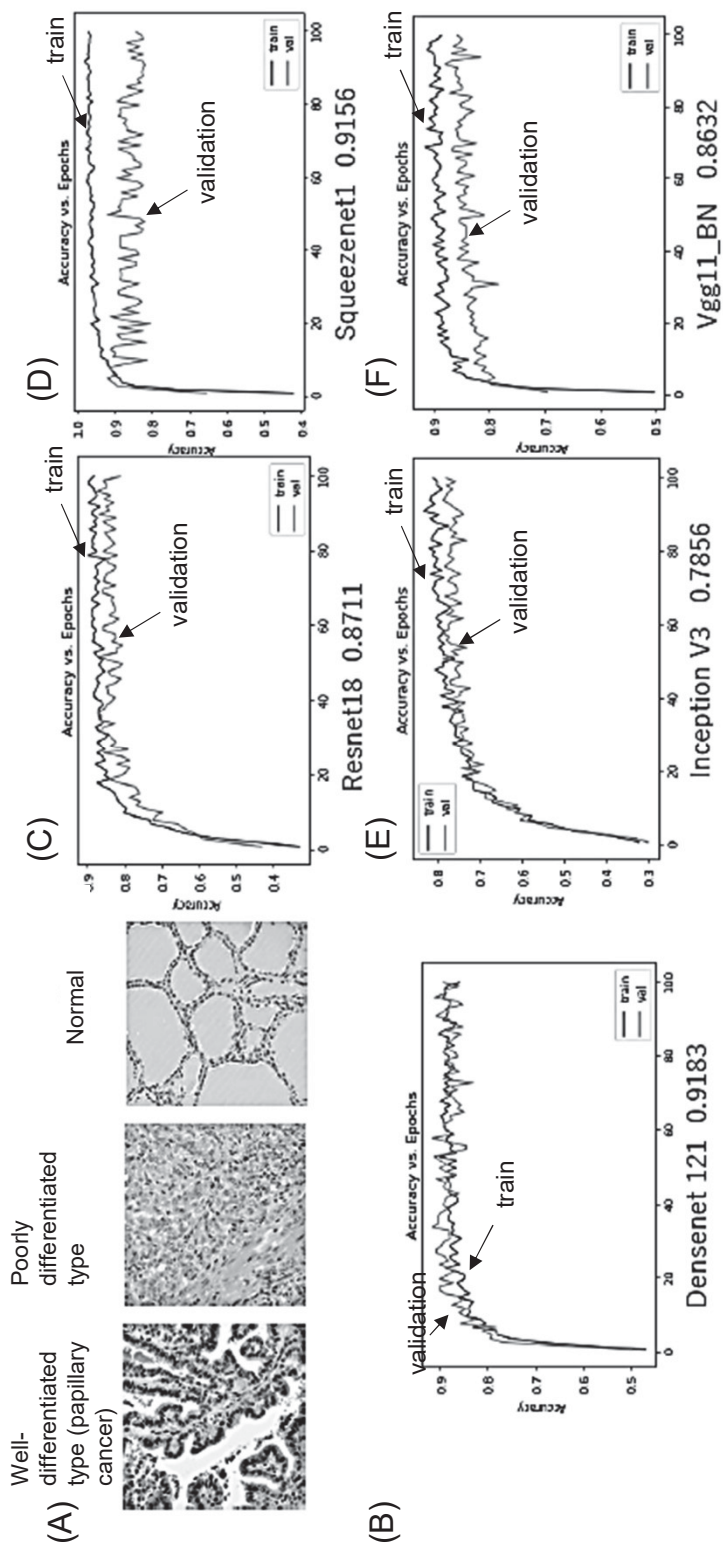


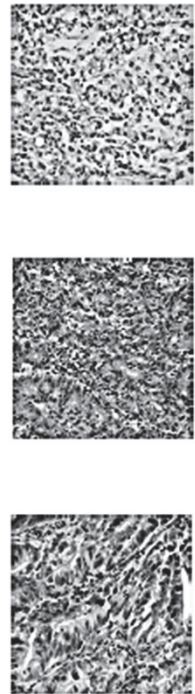
Fig.12



Maximum value of accuracy rate in validation data for each model

Fig.13

Image data set in which pathognomonic histopathological images related to change and expression of gene are known



A B C

Creation of classifier

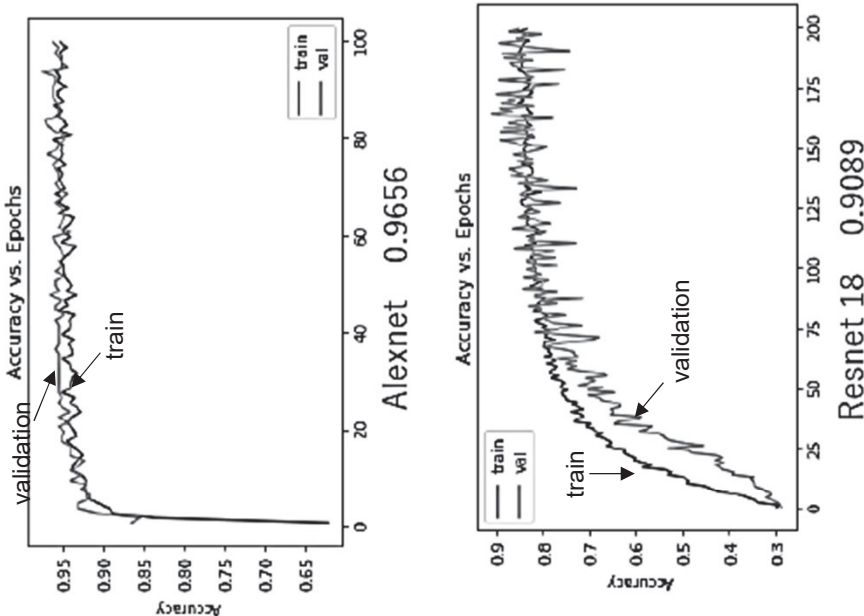


Classification



Detailed search and analysis of gene and protein

Creation of intratumor map, visualization of heterogeneity

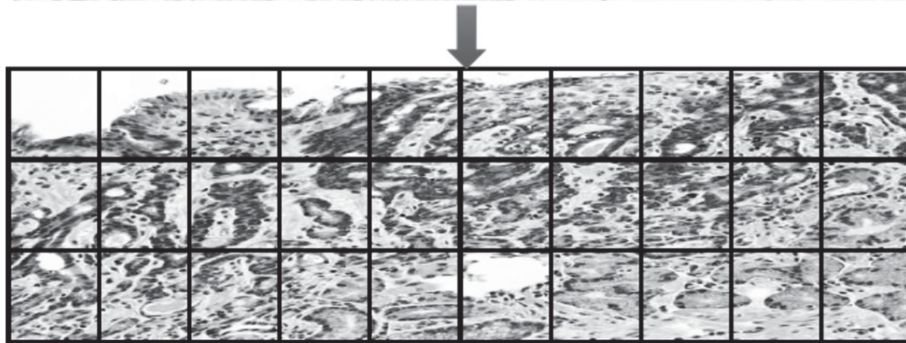
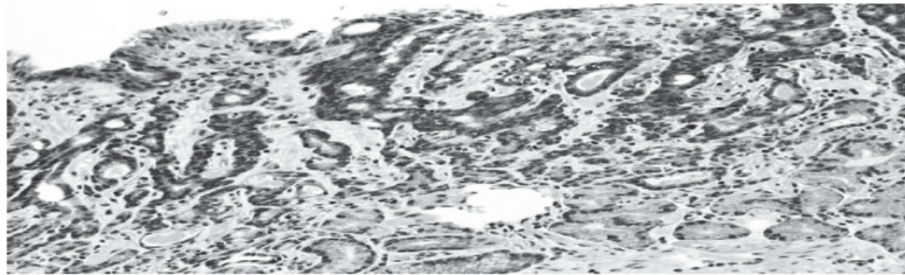


Maximum value of accuracy rate in validation data for each model

Fig.14

(A)

Preparation of image patches for determination



(B)

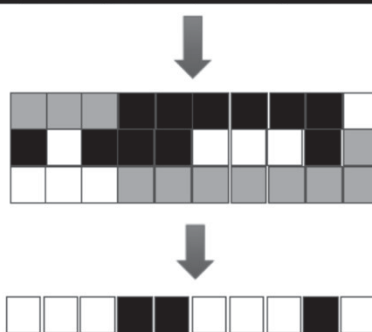
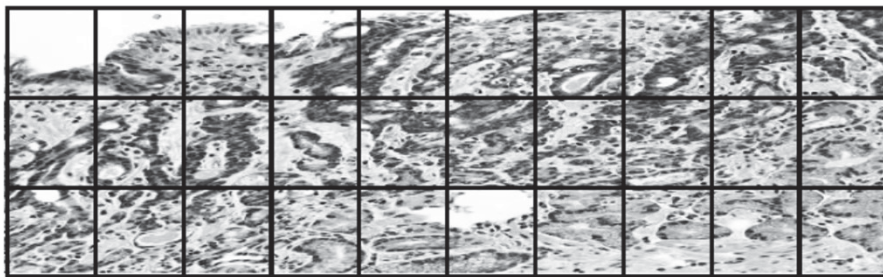


Fig.15

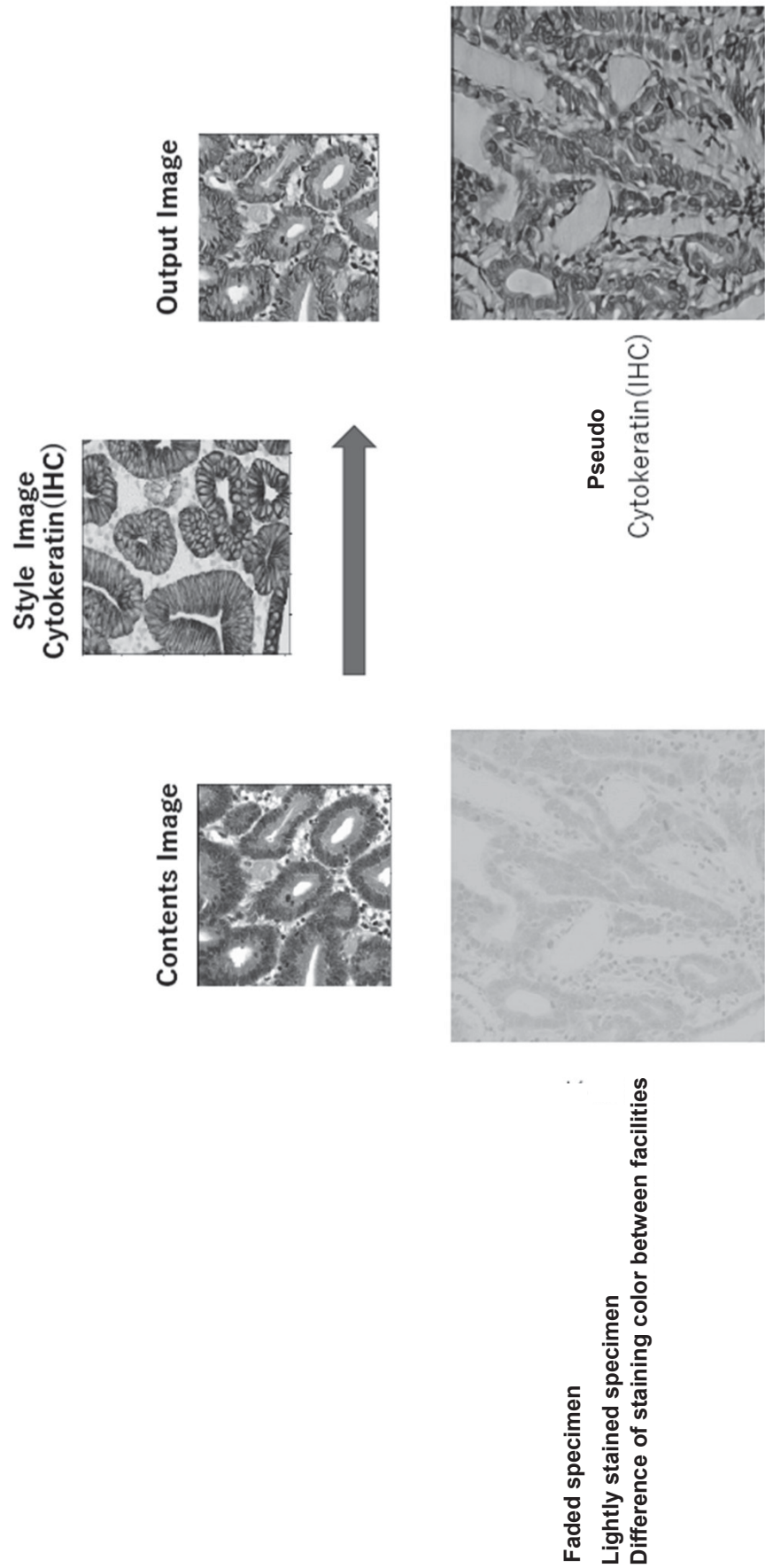


Fig.16

Diagnosis of endoscopically resected specimen of early gastric cancer

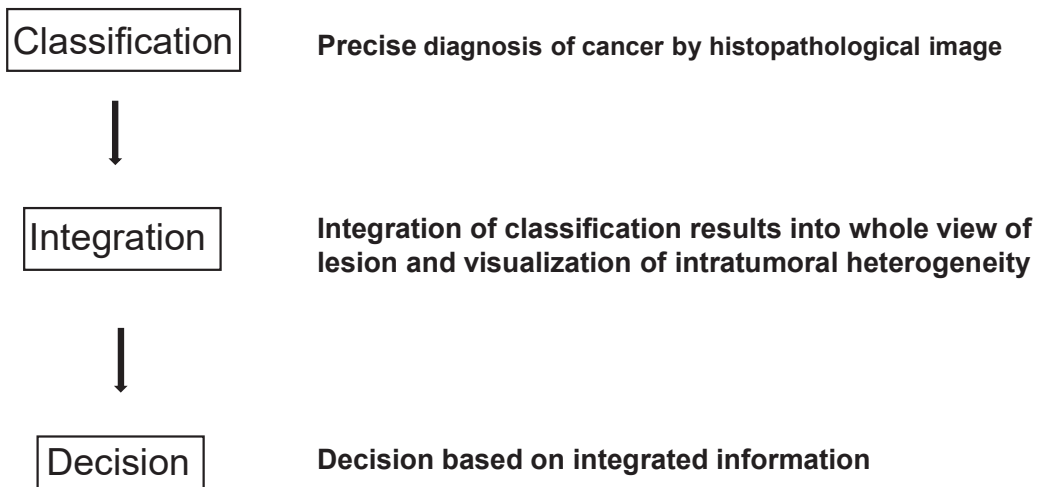
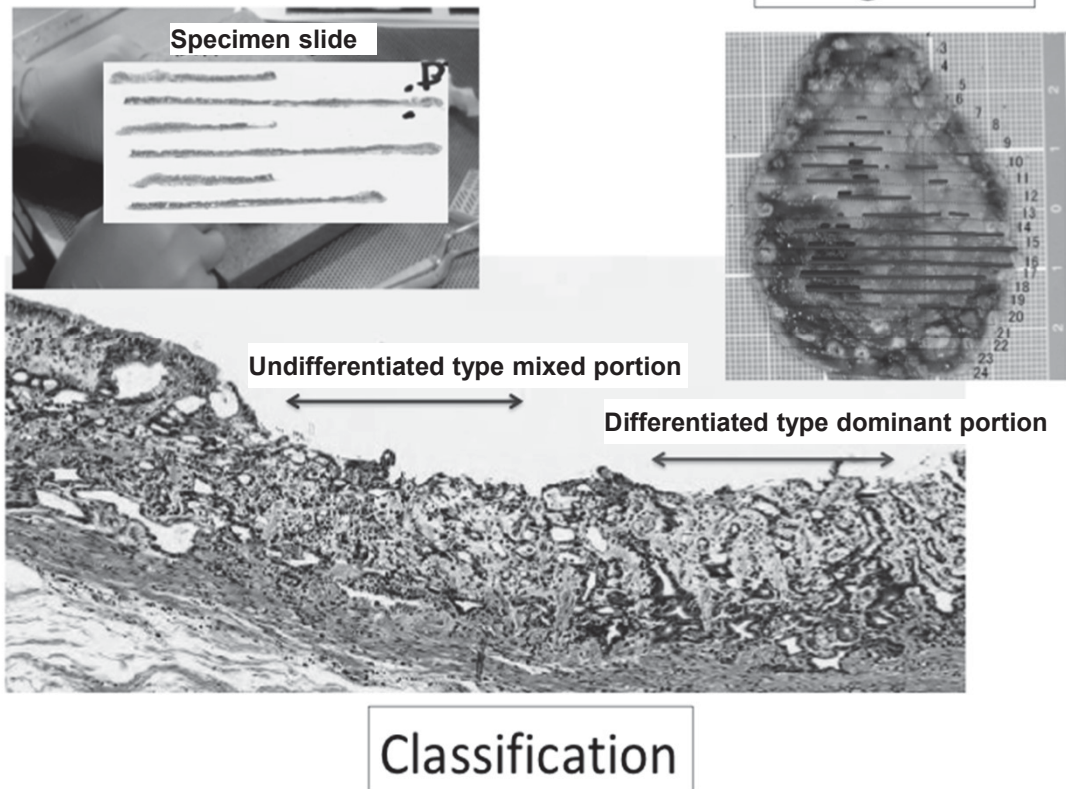


Fig.17