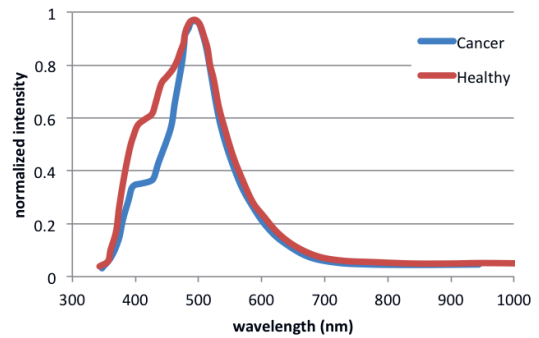


1

1 Cluster analysis of autofluorescence data
2 Autofluorescence spectra of healthy and carcinogenic prostate tissue



2

AUTOFLUORESCENCE HISTOPATHOLOGY

Problem description

Besides traditional histopathology procedures, a key method to classify tissue and detect lesions is to look into the endogenous autofluorescence spectrum. Autofluorescence is attributed to various fluorophores that are intrinsic in tissue, such as, collagens, elastin, NADH, flavins, porphyrins, etc. The presence and the combination of intrinsic fluorophores in tissue is associated with pathologies like cancer, inflammation, etc. and therefore, imaging of the autofluorescence components can help to localize the lesions.

excitation sources at multiple wavelengths, and with a lateral resolution of 20µm. Tissue spectral data are automatically processed and decomposed after training with statistical and cluster analysis algorithms. Tissue can be classified as healthy or carcinogenic.

Features

- Spatial and Spectral scanning
- Fast acquisition
- Automatic tissue classification

Solution

We develop methods and systems for the automatic scanning and classification of large areas of tissue based on its autofluorescence spectral signature. The tissues are fast scanned with a spectral resolution of 1nm between 400 to 1000nm, employing

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