



Classification of Protein Localization Patterns Obtained via Fluorescence Light Microscopy

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We describe a method of classifying cellular protein localization patterns based on their appearance in fluorescence light microscope images. Images depicting cellular protein localization were obtained using immunofluorescence microscopy. After collection, the images were processed and subject to feature extraction. Zernike moments were calculated for each image and used as inputs to one of two classification schemes: a classification tree or a neural network. Of the two classifiers, the neural network demonstrated better performance, correctly classifying 84% of previously unseen images. This work has application as a novel approach to protein description, as a means of automating microscopes, and as part of a new approach to gene discovery.

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