

Title: Imaging of fluorescently labelled mitochondria using Biplane FPALM microscopy

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Abstract: In this thesis the results are presented of a search for suitable PCFP markers for a visualization inner and outer mitochondrial membranes by unique biplane FPALM microscope. We participated in debugging the measuring software for the purpose of 3D visualization mitochondrial nets and determine their parameters. For this purpose were developed two methods. The first one can be applied to determine the parameters of outer membranes and the second one is applicable to determine parameters of inner membranes. On smaller statistical file we managed to confirm dependence quality of mitochondrial net on the cell culture conditions. Under stress conditions e.g. hypoxia the quality of mitochondrial net is changed.

Keywords: mitochondria, Biplane FPALM, GFP, 3D visualization.