



South Bohemian  
Research Center  
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## Information for web pages

**Name of software (Czech):** Expertomica Viopin

**Name of software (English):** Expertomica Viopin

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**Description (Czech):** Program byl vytvořen jako analytický nástroj pro obrázky s fluorescenční mikroskopie s červenou až růžovou autofluorescencí buněk a modrou až fialovou fluorescencí buněčných jader. Pracuje s různými běžnými obrazovými formáty (jpeg, png, bmp, tiff). Softwarová aplikace umožňuje filtraci šumu, segmentaci buněk od pozadí a segmentaci jader od buněk. Poměr plochy buněk ku ploše jader je automaticky vyhodnocen pro každý obrázek, stejně jako průměr a směrodatná odchylka pro celou sadu. Program je ovládán pomocí jednoduchého grafického rozhraní s možností základních funkcí jako zobrazení obrázku, zoom, posunutí. Rovněž dochází k automatickému exportu výsledků do doupěru.

**Description (English):** The software was developed for analysis of image sets from fluorescent microscopy with red/pink autofluorescence of the cells, and blue/violet fluorescence of the nuclei. It works with several common image file formats (jpeg, png, bmp, tiff). Application performs noise filtration, cells to background segmentation, and nuclei to cells segmentation. Ratio of the cells to nuclei is computed individually for each image, as well as average ratio and standard deviation for the whole set. Program enables graphical user interface with basic functions as image view, zoom, and pan. Automatic export of the results is available.

**Installation:** You can download the last version of the software from <http://auc.cz/software/> and unpack to selected directory. Please open in your favorite browser and read the included 'viopin.pdf' installation and user guide file

The installation contains:

viopin.exe - the software

viopin.pdf – instalation help and user guide

Directory test – with two testing images

**Requirements:** Operation system: Windows XP, Vista (32 bit) and 7 (32 bit)

Software:

- Visual C++ 2005 Redistributable Package

- Matlab Compiler Runtime 7.9 (available at '<http://sourceforge.net/projects/expertomica-eda/files/Matlab%28R%29%20Compiler%20Runtime%207.9/7.9%20Win32/MCRInstaller.exe/download>')

- on some computers, .NET Framework might be required during the Matlab Compiler

Runtime instalation, however it is not necessary for the run of Expertomica Viopin application.

**Hardware:**

The software require at least 1 GB of memory (exact amount depend on the size of datafiles) and write permission on the processed directory for temporary files.

**Testing:** The installation contains instalation help and user guide, and Directory test – with two testing images. The software processes common image file formats (jpeg, png, bmp, tiff)

Output: Ascii table of image names and related cells / nuclei ratio (results.txt).

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