Add investigational value to the rtx1™ AO Retinal Camera

AOdetect™
Segmentation software for Adaptive Optics images
AOdetect™
Segmentation application for rtx1™ Adaptive Optics Retinal Images

Adopted by rtx1 users to analyze AO retinal images

AOdetect is an application for supervised segmentation of ultrahigh resolution images acquired with the rtx1 AO retinal camera.

Developed in collaboration with clinicians, it computes local descriptors that help analyze the structure of retinal arterioles and the distribution of parafoveal cone cells. These metrics provide candidate AO biomarkers for clinical investigations.

With AOdetect, you are in complete control as all automated segmentations can be manually corrected in just a few clicks.

rtx1 + AOdetect: Fast follow-up workflow

Thanks to its high-precision algorithm, the rtx1 delivers follow-up AO images that are perfectly aligned with the baseline image.

AOdetect enables analyzing the exact same region in baseline and follow-up images, with only a few clicks.

Your follow-up analysis is automatically updated with each new visit.

This is how you can easily monitor a specific group of cells or chosen vascular section over time.
Wall

For images of small retinal arteries

Automated wall segmentation and thickness computation

Manual correction: click-and-drag to displace the wall borders while monitoring their position in the gradient profile

**Wall metrics**
- Internal and external diameter
- Wall thickness
- Wall Cross Section Area (WSCA)
- Wall to Lumen Ratio (WLR)

**Reproducibility**
0.7% for internal diameter [1]
3.3% for Wall to Lumen Ratio [1]

Example of analysis results in metric units. Visual units are also available.

Mosaic

For images of parafoveal cone cells

Automated mosaic segmentation and Voronoi analysis

Manual correction: simple clicks to add and remove cells while monitoring the Voronoi segmentation

**Mosaic metrics**
- Cell density
- Inter-cell spacing
- Regularity index
- Dispersion index

**Reproducibility**
4% for cell density [2]

**Color-coded Voronoi diagrams**
- Density
- Spacing
- Regularity

Example of analysis results in metric units. Visual units are also available for reduced variability in Voronoi cell density and inter-cell spacing [2].

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Zaleska-Żmijewska et al. J Diab Research, 2017

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Paques et al., Prog Ret Eye Research, 2018

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Cristescu et al. Rom J Ophthalmol, 2019

AO images showed a decrease in the number of foveal cone densities over 2 years in patients with RP. AO may shorten the period required to predict the RP progression rate.

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SPECIFICATIONS

Computer requirements
OS
Windows XP-SP3, 7-SP1, 10
RAM
4 Gbyte or more
CPU
Intel i3 or higher

Export formats
Analysis results
Text file
Printable reports
JPEG

AOdetect Software

AOdetect is an option of the certified rtx1 device in the European Union, Japan and Korea. In other territories, AOdetect is a separate product for research use only.

For use by trained eyecare professionals only.

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