



IKOSA®

Application Documentation

Application Name	CAM Assay
Version	1.0.0
Documentation Version	23.10.2020 - 1
Input Image(s)	Single Image (Standard, RGB)
Input Parameter(s)	None
Keywords	CAM, chorioallantoic membrane, ex-vivo, angiogenesis, chick, vessel, growth, microscopy, assay
Short Description	Quantification of blood vessels on chick chorioallantoic membrane (CAM) assay used in in-vivo angiogenesis research.
References / Literature	For more information regarding the assay check e.g. https://www.ncbi.nlm.nih.gov/pubmed/19007659

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IKOSA

IKOSA® Image Analysis

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Application Description

This application automatically segments blood vessels in microscopy images that are taken from chick chorioallantoic membrane (CAM) Assay samples and measures their total area, length, mean thickness and the number of branching points. Vessels that are in the background (lower layers) that appear blurry in the images are not detected.

Further Information

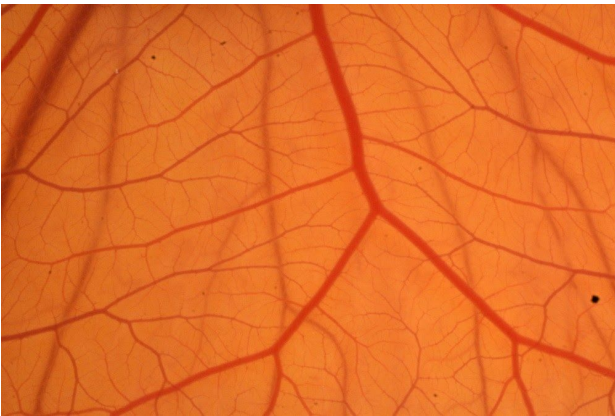
If you have any questions regarding this application or if you want to know if your specific type of images can be analyzed, please get in touch with us at support@kmlvision.com. Also, if you have requests or ideas regarding additional image analysis applications that you would require, please get in touch with us at support@kmlvision.com.

For more information, please visit www.ikosa.ai.

Requirements

Input Image(s)

Input for this application is the following image data:

No .	Image data	Type of image	Color Channels	Color Depth (per channel)	Size [Px]	Resolution [µm/Px]
#1	Single image	Standard	3 (RGB)	8 Bit	Min: 256 x 256 Max: 6144 x 6144	Min: 3 Max: 10
<p>Image Content: Microscopy image of CAM Assay region with typically 10x magnification.</p> <p>Additional requirements:</p> <ul style="list-style-type: none"> • Vessels appear in red/reddish color. • Avoid reflections, e.g. by using a polarisation filter for imaging. <p>Examples</p> 						

For all images, the following requirements apply:


- The illumination must be constant throughout the image(s).
- The sample must be in focus, i.e. no blurry regions in image(s).

Input Parameter(s)

No additional input parameters are required for this application.

Results

Files

No.	File type	Content and Description
1	csv	<i>results.csv</i> : A csv file containing the analysis results for the input image.
2	jpg	<p><i>results_visualization.jpg</i>: A visualization of the detected vessels:</p>  <ul style="list-style-type: none"> • Areas of detected vessels are shown in blue overlay. • Vessel paths are shown as green lines. • Vessel branching points are indicated by red dots.

Description of files

File no. 1: Single csv-file with the following content (*results.csv*):

Col. no.	Column name	Examples	Value range	Description
1	Vessels_total_area [Px ²]	3668	0 - #of pixels in image	Total area covered by detected vessels in Pixel ² .
2	Vessels_total_length [Px]	12092	>=0	Total length of all detected vessels in pixels.
3	Vessels_mean_thickness [Px]	6.98	>=0	Mean thickness of detected vessels in pixels.
4	vessels_num_branching_points	776	>=0	Number of detected branching points..