Open

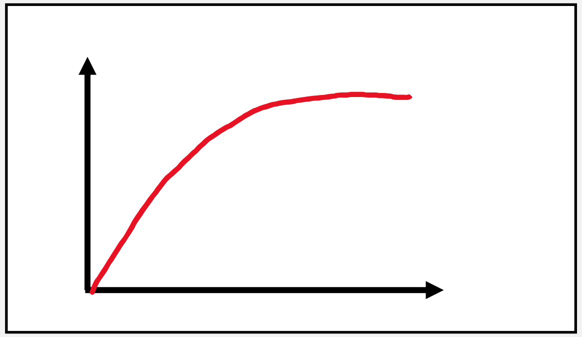
Load

Frame per second:

XXX
(to be given by the user)

Run

Fluorescent signal intensity vs Time ($\Delta I / \Delta t$)

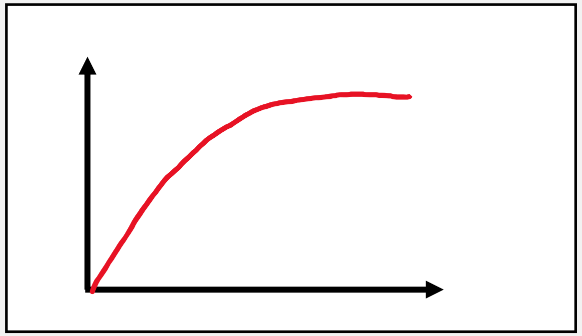


Save as

Export Data

$\Delta I / \Delta t =$

Fluorescent signal intensity vs Time



Save as

Export Data

$\frac{1}{I_o} \Delta I / \Delta t =$

Permeability coefficinet

ROI 1

$\Delta I / \Delta t =$ | $I_o =$ | Vessel Diameter (D) = cm

$P = D/4 * \frac{1}{I_o} * \Delta I / \Delta t =$ cm/s

ROI 2

$\Delta I / \Delta t =$ | $I_o =$ | Vessel Diameter (D) = cm

$P = D/4 * \frac{1}{I_o} * \Delta I / \Delta t =$ cm/s

ROI3

$\Delta I / \Delta t =$ | $I_o =$ | Vessel Diameter (D) = cm

$P = D/4 * \frac{1}{I_o} * \Delta I / \Delta t =$ cm/s

ROI 4

$\Delta I / \Delta t =$ | $I_o =$ | Vessel Diameter (D) = cm

$P = D/4 * \frac{1}{I_o} * \Delta I / \Delta t =$ cm/s

Average P = cm/s

Save as

Export Data

Permeability coefficient through vessel wall (cylindrical structure)

Vessel Surface

Fluorescent signal intensity vs Time (1/s)

Permeability Coefficient

$$P \frac{S_v}{V_v} = \frac{1}{I_0} \frac{\Delta I}{\Delta t}$$

Fluorescent signal intensity vs Time

Vessel volume

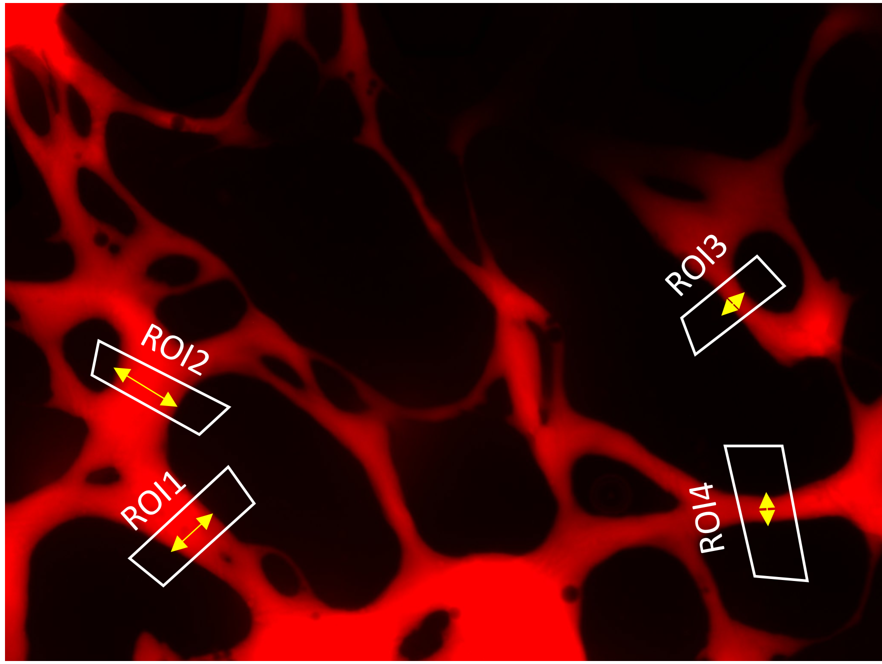
Maximum fluorescent dye intensity at time 0 (inside the vessel/for normalization/constant)

As the network of the vessels is non-homogenous, quantifying this coefficient must be regional following the process on the next slide

$$P = \frac{D}{4} \frac{1}{I_0} \frac{\Delta I}{\Delta t} \quad \text{cm/s}$$

Soheila's manual method to calculate the permeability coefficient

	ROI1
D/2 (cm)	0.0019
Slope ($\Delta I/\Delta t$)	4.20 (using Fiji and based on the mean fluorescent intensity of the region inside the ROI1 polygonal vs time)
I_0	746
P (cm/s)	1.07e-5



The same process to be applied for the other regions of interest (min. 4 regions) and the average to be considered as the permeability coefficient.