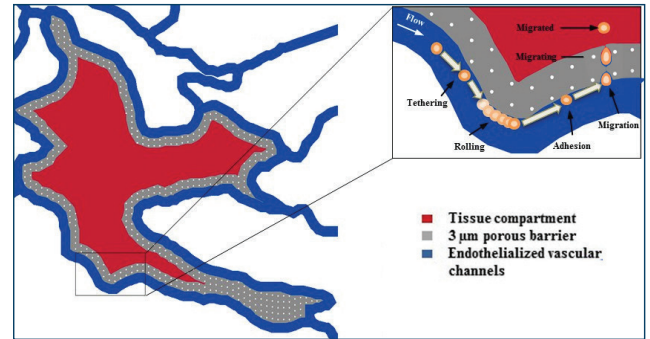


# SynRAM 3D Inflammation Model

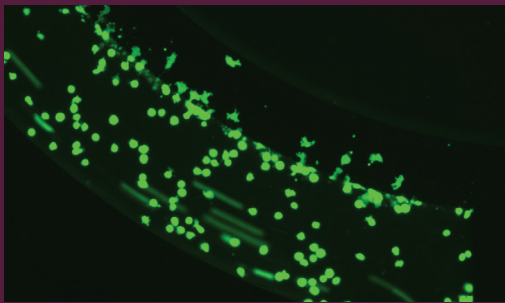
SynRAM™ allows the study of the entire inflammation pathway in a realistic and dynamic environment. By a histological slice of co-cultured tissue and/or tumor cells with a lumen of endothelial cells, SynRAM delivers a physiologically realistic model and enables real-time tracking of rolling, adhesion and migration processes. SynRAM has been successfully validated against *in vivo* studies showing excellent correlation with rolling velocities, adhesion patterns, and migratory processes.

- Physiological flow within a microvascular environment
- *In vivo* like vascular morphology with fully formed lumen
- Co-culture capability for cell-cell interactions
- Quantitative real-time rolling, adhesion, and migration data from a single experiment

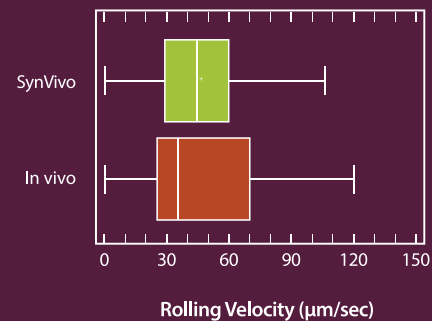


*SynRAM enables real-time assessment of cellular interactions comprising of rolling, adhesion and migration through multiple cellular layers in a single experiment with close correlation to in vivo results.*

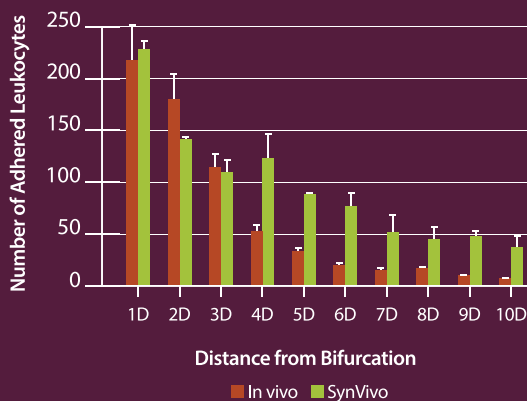
## The SynRAM model reproduces inflammation responses observed in vivo



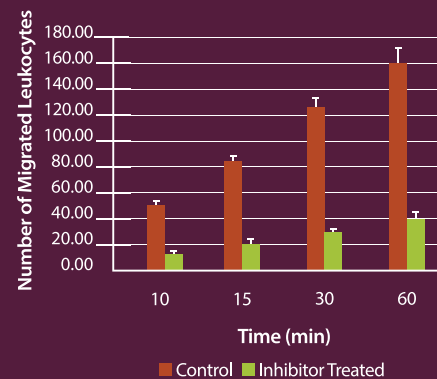
*Real-time visualization of leukocyte rolling, adhesion, and migration across an inflamed endothelium in SynRAM 3D model.*



*Leukocyte rolling, velocities are similar to those observed in vivo*



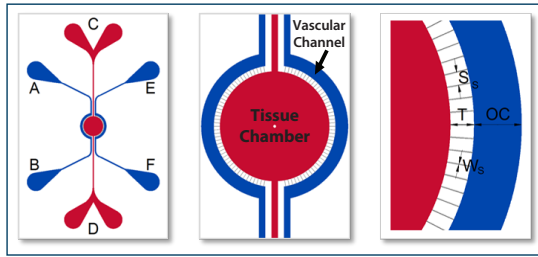
*Leukocyte adhesion pattern in SynRAM matches leukocyte adhesion in vivo*



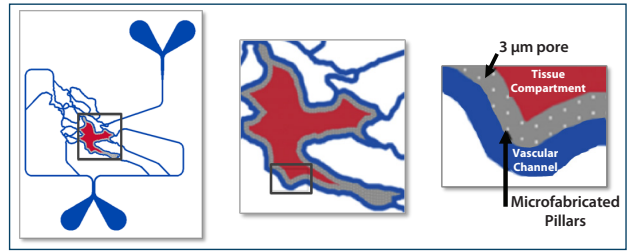
*Screening of inhibitors in SynRAM model. In the presence of inhibitor, migration drops significantly (by more than 75%) compared to control conditions*

**Simultaneously visualize rolling, adhesion and migration in a single experiment**

## IMN2 Idealized network co-culture Chips



## SMN2 microvascular network Co-Culture Chips



Chip Schematics - Depending on your specific research applications you can select from basic IMN2 or SMN2 microvascular co-culture chip configurations.

## Product Purchase Options

Catalog#	Description	Price
<b>401002, 401004</b>	SynRAM inflammation Model Starter Kit - Includes 12 chips, pneumatic priming device tubing, clamps, syringes, and needles. Choose from IMN2 radial or SMN2 microvascular network chips	<b>IMN2 Kit - \$2,100 SMN2 Kit - \$2,500</b>
102008 -SR3	SynRAM IMN2 - Radial Chips (8um pillars) - Pack of 3	<b>\$375</b>
<b>105001-SR3</b>	SynRAM SMN2 - microvascular network chips - Pack of 3	<b>\$499</b>

## Assay Development and Screening using SynRAM

RAM Models Available	Types of Service Projects
<ul style="list-style-type: none"> <li>• Monoculture using primary endothelial cells/cell line</li> <li>• Co-Culture with stromal/tissue cells</li> </ul>	<ul style="list-style-type: none"> <li>• Immune cells (primary, cell lines) rolling, adhesion and migration across the endothelium</li> <li>• Inflammation-induced vascular permeability</li> <li>• Drug-induced vascular injury</li> <li>• Inflammation-induced biomarker analysis</li> <li>• Therapeutic screening</li> <li>• Screening for cell surface biomarkers</li> <li>• Target Identification</li> <li>• Screening for activators/inhibitors of inflammation</li> </ul>

### Don't see your model or assay of interest?

Contact our expert scientific team to discuss your needs

#### Selected Publications using the SynRAM Model

- (1) The Role of Tyrosine Phosphorylation of Protein Kinase C Delta in Infection and Inflammation. Yang Q et al (2019). *Int J Mol Sci.* 2019 Mar 26; 20 (6)
- (2) PKCδ Inhibition as a Novel Medical Countermeasure for Radiation-Induced Vascular Damage. Soroush F et al (2018). *The FASEB Journal.* Vol. 32, No. 12.
- (3) A Novel Microfluidic Assay Reveals a Key Role for Protein Kinase C δ in regulating human Neutro-Phil-Endothelium Interaction. Soroush F et al (2016). *J Leukoc Biol.* 100:1027-1035.
- (4) Bioinspired Microfluidic Assay for In Vitro Modeling of Leukocyte-Endothelium Interactions. Lambert, G et al (2014). *Anal. Chem.* 2014, 86 (16), 8344-8351



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