

# Chick Chorioallantoic Membrane assay

*Commonly used acronym: CAM assay*

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## Contact person

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## Organisation

**Name of the organisation** University of Hasselt (UHasselt)

**Department** Laboratory for research in ischemic stroke, stem cells & angiogenesis (LISSA)

**Specific Research Group or Service** Laboratory for research in ischemic stroke, stem cells & an

**Country** Belgium

**Geographical Area** Flemish Region

## SCOPE OF THE METHOD

<b>The Method relates to</b>	Animal health, Human health
<b>The Method is situated in</b>	Basic Research
<b>Type of method</b>	In vitro - Ex vivo
<b>Species from which cells/tissues/organs are derived</b>	Chicken embryo
<b>Type of cells/tissues/organs</b>	Chorioallantoic membrane

## DESCRIPTION

### Method keywords

in ovo  
chorioallantoic membrane  
CAM  
Embryonic development  
chicken embryo  
fertilized chicken egg

### **Scientific area keywords**

vascular research  
biomedical research  
pharmacology  
angiogenesis  
Developmental biology

### **Method description**

The Chorioallantoic Membrane (CAM) assay is a versatile, cost-effective *in ovo* model using the vascular-rich membrane of fertilized chicken eggs to study biological processes such as angiogenesis, tumor growth, metastasis, and drug testing. Its transparency and rapid vascularization make it ideal for the evaluation of vascular responses. Widely used in cancer research, pharmacology, and tissue engineering, the CAM assay serves as an ethical and efficient alternative to traditional animal models, offering high-throughput testing in a controlled embryonic environment. For further information, please contact Prof. dr. Annelies Bronckaers ([annelies.bronckaers@uhasselt.be](mailto:annelies.bronckaers@uhasselt.be)) at the Biomedical Research Institute (BIOMED) of Hasselt University.

### **Lab equipment**

- Egg incubator (temperature and humidity control),
- Camera/microscope.

### **Method status**

History of use  
Published in peer reviewed journal

## PROS, CONS & FUTURE POTENTIAL

### Advantages

- Low-cost assay,
- Rapid growth,
- Ethical alternative to animal models,
- High-throughput screening,
- Transparent membrane.

### Challenges

- Limited Immunological Context,
- Short Experimental Window,
- Egg variability.

## REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

### References

Ratajczak J, Hilkens P, Gervois P, Wolfs E, Jacobs R, Lambrichts I, Bronckaers A. Angiogenic Capacity of Periodontal Ligament Stem Cells Pretreated with Deferoxamine and/or Fibroblast Growth Factor-2. PLoS One. 2016 Dec 9;11(12):e0167807. doi: 10.1371/journal.pone.0167807. PMID: 27936076; PMCID: PMC5147980.

Merckx G, Hosseinkhani B, Kuypers S, Deville S, Irobi J, Nelissen I, Michiels L, Lambrichts I, Bronckaers A. Angiogenic Effects of Human Dental Pulp and Bone Marrow-Derived Mesenchymal Stromal Cells and their Extracellular Vesicles. Cells. 2020 Jan 28;9(2):312. doi: 10.3390/cells9020312. PMID: 32012900; PMCID: PMC7072370.

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