Chick Chorioallantoic Membrane assay

Commonly used acronym: *CAM assay*

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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 & angiogenesis (LISSA)

Country Belgium

Geographical Area Flemish Region

SCOPE OF THE METHOD

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