Ex ovo chick chorioallantoic membrane model

Commonly used acronym: *CAM model*

Created on: 22-08-2019 - Last modified on: 08-11-2019

Contact person

Hanna Tay

Organisation

Name of the organisation Ghent University (UGent)
Department Morphology
Country Belgium
Geographical Area Flemish Region

SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vivo
Used species	chicken embryo
Targeted organ system or type of research	chorioallantoic membrane (CAM)

DESCRIPTION

Method keywords

ex ovo
in ovo
chicken embryo
chorioallantoic membrane
vasculature
CAM

Scientific area keywords

angiogenesis
embryogenesis
vascular development
metastasis
tumorigenesis

Method description

The chorioallantoic membrane (CAM) is a highly vascularized membrane which results from the fusion of two extra-embryonic membranes, namely the chorion and the allantois. The CAM is easily accessible for manipulation and imaging, but methodologies differ whether the chicken embryo stays within its shell (*in ovo*), or is transferred to an external recipient (*ex ovo*). In a nutshell, compounds or cells are added to the CAM either by intravenous injection or topical application, and their effect on for example angiogenesis is determined.

Lab equipment

Incubator at 37,8°C and 70-90% humidity.

Method status

Internally validated

PROS, CONS & FUTURE POTENTIAL

Advantages

- Fertilized chick embryos are readily available ;
- CAM is easily accessible for manipulation and imaging ;
- Suitable model to study angiogenesis in xenograft onplants or after seeding of allogenic cells, as the chick embryo only develops an adequate immune system shortly after hatching ;
- Short developmental time of the chick embryo (20-21 days) allows for a fast screening of different testing conditions ;
- No special culturing or housing conditions needed ;
- Relatively cheap model.

Challenges

- Embryonic tissue ;
- Limited amount of reagents available for chicken ;
- Avian instead of mammalian model ;
- CAM is susceptible to non-specific angiogenesis.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

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