Physic - Life/Health sciences - Ecology/Environment / Environment and construction - Education - Health

UBICLEAR

Ubiclear is a rapid sample transparency kit for 3D microscopy, which is non-toxic and easy to use.

PRESENTATION

Tissue clearing is a technique used to study the anatomy and structural morphology of tissue, as well as the connections between different cellular structures, using multiscale imaging. Recent 3D microscopies require the transparency of the sample to be imaged. Current techniques are time-consuming and involve multiple steps, which limits their application to research laboratories. We have developed a rapid and safe tissue clearing technique that requires only a few steps and no ancillary equipment or specialised training for the user. It also integrates well into standard histology protocols. This technique renders various mammalian organs (including teeth, bones and cartilage) transparent within hours (minutes for small specimens) and can also be used on insects, molluscs, small fish a plant tissues. It preserves autofluorescence, fluorescence proteins immunofluorescence.



Transparisation (clearing) - Imaging in 3D
All biological tissues, e.g. anatomical pathology

COMPETITIVE ADVANTAGES

- Rapidity
- Non-toxicity
- No particular equipment or safety measures required (e.g. fume hoods, masks, etc.)
- Universality (tissues of mammals, soft & hard tissues (e.g. teeth, bones), insects, plants, molluscs, etc.)

INTELLECTUAL PROPERTY

- Patent WO2024089224A1, europeen patent n°23809456.9 entitled 'Composition and method for clearing biological samples'

LABORATORIES

CNRS, Université Paris Cité

CONTACT

+33 (0)1 44 23 21 50
industriels@erganeo.com
Ref. project : 644

APPLICATIONS

- Transparisation (clearing)
- Autofluorescence
- Calcified samples (e.g. teeth and bone moulds)
- Pigmented samples
- Compatible with genetically engineered fluorescent proteins such as dTomato and GFP
- Direct/Indirect immunofluorescence with Alexa 488-, 555- and 647-labelled antibodies
- Fluorescent molecules such as lectins
- Colorants such as Evans Blue and crystal violet (for use with neurons)
- Compatible with Macroscope fluorescence microscopes, confocal microscopy and light sheet microscopy
- Reversible technique

PUBLICATIONS

- *Fast tissue clearing and volume imaging techniques for anatomy.* Clément Ricard, Doriane Hazart, Brigitte Delhomme, Marwa Moulzir, Irina Rakotoson, Martin Oheim : Microscopy Research & Technique (accepted), 2025
- *Label-free high-resolution volume imaging of cleared testes.* Moulzir M, Hazart D, Delhomme B, Oheim M, Ricard C : Reproduction, 2026

DEVELOPMENT PHASE

- ☑ Patent granted in Europe; patent pending in the U.S.
- ☑ Already validated the proof of market.