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Embryo Viability Assessment System Using Phasor Fluorescence Lifetime Imaging Microscopy

Tech ID: 34856 / UC Case 2018-893-0

BRIEF DESCRIPTION

A non-invasive imaging system utilizing fluorescence lifetime microscopy and Fourier-transformed phasor analysis to objectively determine embryo viability.

FULL DESCRIPTION

- » Non-invasive and label-free embryo assessment method
- » Quantitative and objective analysis reducing human subjectivity
- » Faster evaluation compatible with clinical IVF timeframes
- » Minimized photodamage through two-photon excitation
- » Deeper imaging with high-resolution fluorescence lifetime data
- » Automated calculation of viability index from intrinsic metabolic signals
- » Reduces reliance on labor-intensive morphological inspection

SUGGESTED USES

- » In vitro fertilization (IVF) clinics for human assisted reproduction
- » Animal breeding facilities seeking enhanced embryo selection
- » Research institutions studying embryo development and metabolism
- » Development of advanced fertility diagnostic and monitoring tools
- » Integration into ART workflows to enable single embryo transfer protocols

ADVANTAGES

Non-invasive and label-free embryo assessment method
Quantitative and objective analysis reducing human subjectivity
Faster evaluation compatible with clinical IVF timeframes
Minimized photodamage through two-photon excitation
Deeper imaging with high-resolution fluorescence lifetime data
Automated calculation of viability index from intrinsic metabolic signals
Reduces reliance on labor-intensive morphological inspection

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,869,191	01/09/2024	2018-893
United States Of America	Issued Patent	11,386,559	07/12/2022	2018-893

CONTACT

Alvin Viray
aviray@uci.edu
tel: 949-824-3104.



OTHER INFORMATION

CATEGORIZED AS

- » **Imaging**
 - » Medical
- » **Medical**
 - » Imaging
 - » Screening

RELATED CASES

2018-893-0

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5270 California Avenue / Irvine, CA
92697-7700 / Tel: 949.824.2683



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