

Live Cell Conjugation Chemistry for Imaging, Sensing, Biomanufacturing, and Cell Therapy

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Categories:

- Biotechnology
- Medical/Health

Keywords:

- Biotechnology
- Drug Conjugates
- Drug Delivery
- Imaging
- Medical/Health

Surface modification of live cells has many biomedical and therapeutic applications, such as live cell imaging and cell therapy. The current approaches have limitations including poor stability over time and incompatibility with mammalian cells due to toxicity. There is a need for a new technology that improves surface modification of live cells.

Researchers at Purdue University have developed a new technology that enables surface modification of live mammalian cells. This cell-modification technology has applications in live cell imaging, manufacturing of cell therapies, enhancement of cells for therapeutic applications, cell-drug conjugation for enhanced killing of cancer cells, and drug delivery in a pH dependent manner to sites of inflammation. This technology conjugates small molecules, proteins, fluorophores, and PET tracers to live cells without nanoparticles or other vehicles.

Advantages:

- Conjugation to cell membranes without killing cells
- Functionalizes living cells with components such as small molecules, proteins, fluorophores, and PET tracers
- No use of nanoparticles or other vehicles

Potential Applications:

- Cell membrane imaging
- Enhanced cell therapy
- Production of therapeutic cells

People:

- Chopra, Gaurav (Project leader)

Intellectual Property:

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Type: NATL-Patent

Country of Filing: United States

Patent Number: (None)

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Contact OTC:

Purdue Office of Technology Commercialization

The Convergence Center

101 Foundry Drive, Suite 2500

West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org