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MTT Assay - Medistri

🚀 MTT Assay

MTT Assay is a cornerstone technique in cell biology, pivotal for evaluating cell viability, proliferation, and cytotoxicity. This assay provides an indispensable tool for laboratories and research facilities, ensuring precise and reliable insights into the effects of pharmaceutical compounds, environmental agents, and other substances on cell health.

MTT Assay is a colorimetric assay that measures the metabolic activity of cells as an indicator of their viability. By leveraging the cell's natural enzymatic processes, this assay transforms a yellow tetrazolium salt (MTT) into insoluble purple formazan crystals. These crystals only form in cells with active metabolism, offering a direct correlation between formazan production and the number of living cells.

Vital for understanding the effects of new drugs and treatments, the MTT Assay provides critical data on the cytotoxic potential of substances, helping researchers identify safe and effective dosage levels. Moreover, it serves as an early indicator of how cells might respond to a given treatment, making it an essential step in drug development, toxicology studies, and quality control in manufacturing processes.

At Medistri, the MTT Assay can be used to access the Cytotoxicity of:

- Medical Device's Extractable Materials.
- Toxic substances.
- Environmental Toxins and Contaminants.
- Drug sensitivity profiles for patients with haematological malignancies and in primary screening of potential chemotherapeutic drugs.

Conducting the MTT assay involves a series of meticulously controlled steps to ensure accuracy and reproducibility:

1. **Cell Seeding:** Cells are cultured in a 96-well plate, with each well containing a specific cell density optimized for the assay.
2. **Treatment Application:** The substance or treatment under investigation is applied to the cells, allowing for an incubation period where the treatment exerts its effects.
3. **MTT Addition:** Following incubation, MTT reagent is added to each well. The plate is then incubated to allow viable cells to reduce MTT into formazan crystals.
4. **Solubilization and Measurement:** After sufficient incubation, a solubilizing agent (typically DMSO) is added to dissolve the formazan crystals. The solution's absorbance is then measured, directly reflecting cell viability.

ANSI/AAMI/ISO 10993-5:2009 standard provides specific guidelines for assessing the cytotoxicity of medical devices, materials, and extracts. It focuses on the in vitro testing of cells to determine whether a material has the potential to cause adverse biological effects. The MTT Assay is one of the recognized methods within this standard, used to evaluate the cytotoxic potential of medical device materials by measuring the reduction of MTT by cellular enzymes.

The MTT Assay is a key testing for assessing cell viability and cytotoxicity, critical for advancing scientific research and product development. By utilizing the MTT assay, Medistri supports the Pharmaceutical and Biotech industries with robust, reliable data, helping to drive innovation and ensure the safety of new treatments and therapies.

🎯 To learn more about Medistri's MTT Assay, visit on our website here or directly contact our team at contact@medistri.swiss.

- The Medistri Team

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