

MOUSE MIOBLAST (C2C12) SPHEROIDS STRUCTURED USING PARAMAGNETIC IRON NANOPARTICLES AS AN IN VITRO CULTURE SYSTEM OF TOXOPLASMA GONDII TACHYZOITES.

| Reference | Presenter | Authors (Institution) | Abstract |
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| 02-014 | Ana Cristina Gomes Nascimento | Nascimento, A.C. (IPEN/CNEN-SP); Passos, P.d.(Ipen); Lima, M.M. (Ipen); Galisteo Junior, A.J.(Instituto de Medicina Tropical); Vieira, D.P. (IPEN); | Tridimensional cell culture techniques became essential for understanding physiological processes that are obliterated or fainted in conventional bi-dimensional cultures. These techniques are prone to produce more realistic modeling of the complex environment of living tissues, leading to much better understanding of mammalian tissue organization. This work used magnetic levitation of cell aggregates (spheroids) by adsorbing iron nanoparticles to C2C12 mouse (<i>Mus musculus</i>) mouse line cells (ATCC # CRL-1772), which are suspended with magnetic fields. The cells formed three-dimensional bodies that were cultivated suspended in the air-liquid interface. Magnetite (Fe ₃ O ₄) nanoparticles with mean diameter of approximately 50 nm were produced by an alkaline coprecipitation methodology under reduction by microwave energy. Composition and size of crystallites were determined by DRX analysis. Adsorption on cell membranes occurred after functionalization with poly-L-lysine. Work concentrations of nanoparticles did no induce cytotoxicity in C2C12 monolayer cultures. Transmission electron microscopy of spheroid sections showed some findings morphologically compatible to the shape of reproductive intracellular vacuoli of <i>T.gondii</i> after cell invasion, demonstrating an interaction of cells with parasites in three-dimensional models. |

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