MATERIALS AND METHODS
The YIKVAV modified fragment (25 μg) was radiolabeled with [^{131} I]NaI (11.1–14.8 MBq) using the chloramine T method (reaction time=90 s). The radiochemical yield was evaluated by ascending chromatography using TLC-SG strips and acetonitrile/water (95:5), as eluent. The radiopeptide, [^{131} I]I-YIGSR, was incubated with 2x10 ^{6} MDA-MB-231 and MCF-7 cells at 37°C under agitation (500 rpm). *In vitro* binding and internalization were assessed at 1, 4, and 24 h post-incubation. To evaluate the biodistribution profile, the [^{131} I]I-YIKVAV was intravenously injected into normal nude female Balb/c mice. *Ex vivo* biodistribution was performed at 0.5 and 2 h after injection.
DISCUSSION AND RESULTS
The data revealed radiochemical yield >90% (n=10). The *In vitro* data showed high affinity of the radiopeptide to both human breast cancer cells. The binding percentages were 5.65±0.68, 7.15±0.64, and 7.34±1.17, and the internalization percentages were 68.22±3.70, 73.37±3.73, and 52.00 ±6.10, at 1, 4, and 24 h, respectively, for MDA-MB-231 cells (n=5). The assay with MCF-7 cells showed binding percentages of 15.21±1.54, 18.10 ±1.63, and 13.09±2.23, and internalization percentages of 78.42±2.95, 79.23±3.62, and 59.71±5.57, at 1, 4, and 24 h, respectively (n=5). The biodistribution data showed rapid blood clearance and low accumulation of the radiopeptide in the evaluated organs (%ID ^{131} I]I-YIKVAV (n=3). Further biodistribution in breast tumor-bearing mice will be performed in order to elucidate in vivo tumor uptake.
CONCLUSION
Therefore, [^{131} I]I-YIKVAV showed high affinity to breast cancer cells and the biodistribution profile revealed that the radiopeptide do not accumulate in any organ compatible with breast cancer primary tumor or its metastasis.
Keywords: [131I]I-YIKVAV, Breast cancer, Derivative of laminin-111
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08990 - Poster Session

NB.02 - Effective methodology for maintaining Toxoplasma gondii in vitro using paramagnetic iron nanoparticles to support three-dimensional cell culture

Ana Cristina Gomes Nascimento [1], Andres Jimenez Galisteo Junior[2], Giovana Dias da Silva[1], Leonardo Wilans Pereira de Souza Rocha[1], Daniel Perez Vieira[1]
[1]Laboratory of Radiobiology – Biotechnology Center , Nuclear and Energy Research Institute - IPEN/CNEN, USP, (SP, Brazil), [2]Laboratory of Protozoology, Institute of Tropical Medicine of São Paulo - IMTSP, USP (SP, Brazil)

INTRODUCTION
Toxoplasma gondii is a protozoan parasite that infects approximately one billion people worldwide. Upon infection, the host may die due to latent infection or presence with chronic cysts in brain, retina or muscle tissue. Humans can become infected consuming water or foods contaminated with oocysts or eating undercooked meat. Its virulent form is difficult to replicate in vitro, requiring additional steps using experimental animals. The use of nanotechnology can contribute to this in vitro production, through the three-dimensional cultivation of mouse fibroblast cells (NIH / 3T3 ATCC ® CRL-1658™) and nanoparticles synthesized with radiation.
OBJECTIVES
The objective of this work was to demonstrate the three-dimensional culture of fibroblast cells aggregated to nanoparticles for inoculation the T. gondii.
MATERIALS AND METHODS
This methodology was created to facilitate parasite management and replication. For the production of nanoparticles, the work used concentrations of iron sulfate II heptahydrate (Fe2SO4.7H2O, CAS 7782-63-0) and glycine (NH2CH2COOH, CAS 56-40-6) diluted in ultrapure water free of O2 at pH 12. This solution was irradiated by electron beam of the IPEN / CNEN-SP Radiation Technology Center in doses of at least 15 and at most 30kGy. Paramagnetic iron oxide nanoparticles (PION's) were then adsorbed on cell membranes, and cells were kept together by a magnetic field. Structured spheroids (4 day of culture) were infected with 106 parasites (RH strain) and the infection was evaluated by transmission electron microscopy.
DISCUSSION AND RESULTS
Tachyzoites were found inside 3T3 cells, assuring that the spheroid can be a suitable culture substrate to T. gondii in vitro propagation.
CONCLUSION
A three-dimensional methodology for in vitro cultivation of the parasite is perhaps the key for applications in the study of toxoplasmosis, as it has a fast, cheap, efficient production (yield and reduction of contamination).
Keywords: Toxoplasma gondii, Three-dimensional cell culture, Nanoparticles
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08481 - Poster Session

NB.03 - Beneficial effects of fructo-oligosaccharides (FOS) and arginine on the intestinal mucositis, induced by 5- fluorouracil (5-FU)

Maria Emília Rabelo Andrade [1], Luísa Martins Trindade[2], Simone Odília Antunes Fernandes[1], Vasco Ariston de Carvalho Azevedo[3], Geovanni Dantas Cassali[4], Simone de Vasconcelos Generoso[2], Valbert Nascimento Cardoso[1]
[1]Departamento de Análises Clínicas e Toxicológicas, Universidade Federal de Minas Gerais (MG, Brasil), [2]Escola de Enfermagem, Universidade Federal de Minas Gerais (MG, Brasil), [3]Departamento de Biologia Geral, Universidade Federal de Minas Gerais (MG, Brasil), [4]Departamento de Patologia Geral, Universidade Federal de Minas Gerais (MG, Brasil)

INTRODUCTION
Mucositis is one of the most common complications in patients undergoing chemotherapy or radiotherapy. The use of compounds with action on the immune system and intestinal microbiota may be a beneficial alternative for the prevention and/or treatment of mucositis.
OBJECTIVES
So, the aim of this study was to evaluate the effects of FOS and arginine on intestinal damage in experimental mucositis.
MATERIALS AND METHODS
Balb/c mice were randomized into 4 groups: CTL (without mucositis + saline), MUC (mucositis + saline), FOS (mucositis + supplementation with FOS – 1st until 10th day) and ARG (mucositis + supplementation with arginine – 1st until 10th day). On the 7th day, mucositis was induced with an intraperitoneal injection of 300 mg/kg 5-FU. After 72 h, weight variation, intestine length, intestinal permeability (IP), morphometry and histopathology analysis were evaluated by ANOVA two way test. Significance level was set at $p < 0.05$.
DISCUSSION AND RESULTS
The MUC group showed lost weight, reduced intestine length and increased IP ($p < 0.05$). Results showed presence of tissue damage, inflammatory cells and ulcerations in the ileum of animals of MUC group. FOS and arginine supplementation reduced lost weight, intestinal permeability and maintained the intestine length at physiologic levels ($p < 0.05$). However, arginine was more effective in reducing tissue damage and maintaining villus height in the ileum compared with FOS group.
CONCLUSION
In conclusion, the present results show that FOS and arginine restored intestinal barrier, decreased lost weight and the inflammation induced by mucositis. These immunomodulators could be important adjuvants in the prevention and treatment of mucositis.
Keywords: arginine, fructo-oligosaccharides , mucositis
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