alasbimn journal

Year 7, Number 27, January 2005

Radiobiology / Radiopharmacy / Radiochemistry

Indice/Index

Números anteriores
Back issues

Enviar colaboraciones
Instructions to authors

Sitios de interes
Links

E-mail

Da Silva, M. A.[1]; Suzuki, M. F.[1]; Guimarães, M. I. C. C.[2]; Buchpiguel, C. A.[2]; Ribela, M. T. C. P.[1]; Bartolini, P.[1]; Okazaki, K.[1]

[1] Molecular Biology Center, IPEN - CNEN/SP, São Paulo - SP, Brazil;
[2] Nuclear Medicine Center, HCFMUSP, São Paulo - SP, Brazil;
[3] Faculdades Integradas de Santo André - FEFISA,- SP, Brazil

Correspondencia:

Miriam F. Suzuki
E-mail: mfsuzuki@ipen.br
Fono: 0XX11-3816-9238

M.I. Guimarães
E-mail: micguima@usp.br
Fono: 0XX1199508502

Cita/Reference:
Da Silva, M. A.; Suzuki, M. F.; Guimarães, M. I. C. C. et al. Cytogenetic effects of ^{131}I administered with recombinant human thyrotropin hormone (rec-hTSH) on blood lymphocyte of Wistar rat. Alasbimn Journal 7(27): January 2005

Cytogenetic effects of ^{131}I administered with recombinant human thyrotropin hormone (rec-hTSH) on blood lymphocyte of Wistar rat

The large application of ^{131}I for diagnostic and therapeutic purposes is essentially due to its preferential thyroid uptake, which is related to the gland activity in physiological and pathological thyroid conditions. Despite the recognized efficacy of various radionuclides used in nuclear medicine, there is little information about the cytogenetic effects of beta emitter radionuclides. The aim of the present study is to analyze the cytogenetic effect of ^{131}I preceded by the administration of recombinant human thyrotropin hormone (rec-hTSH produced by IPEN - CNEN/SP) in animal model, using the chromosome aberration technique. Rec-hTSH is a glycoprotein administered in patients submitted to thyroidectomy as an alternative to thyroid hormone withdrawal in order to increase TSH level and, consequently, ^{131}I uptake by metastatic tissue, still maintaining their euthyroid condition and quality of life. There are no data about the cytogenetic effect of prolonged exposure to ^{131}I preceded by rec-hTSH in animal as well as in human being. Wistar rats (SPF females, weighing ~ 200 g) were divided in two groups: one group of animals was treated with ^{131}I only (11.1 MBq, by gavage) and the other group received rec-hTSH (1.2 microg, by intramuscularly injection) 24h before the administration of ^{131}I. The blood samples were collected via orbital plex before the treatments (basal), 24 hours and 7 days later. The cytogenetic analysis showed an increase in chromosome aberration 24 hours and 7 days after the administration of ^{131}I with or without rec-hTSH, compared to basal

10864

values, although the difference was not found significant ($p>0.05$). There was also no difference ($p>0.05$) between the chromosome aberration rate in blood samples collected after the administration of ^{131}I only and those preceded by rec-hTSH. The use of an animal model can provide important informations about the relation between the therapeutic exposure to the radionuclide and its genotoxic potential.

Financial support: FAPESP

Preparation and evaluation of the biodistribution of technetium-99m substituted ethylenediamine complex | ^{131}I-Vasoactive Intestinal Peptide ([^{131}I]VIP) for Receptor Scintigraphy in Oncology. Compative Biological Distribution Studies in Normal and Tumour Animals | Preparation and quality control of ^{131}I-MB (Methylene Blue) | Synthesis of 2-[18F] fluor-2 deoxy-D-glucose (18F-FDG) | Labeling of DOTA-Tyr3-octreotate with ^{177}Lu: stability and biodistribution study | Exposure to radiation of nursing assistants during iodine therapy in a period of eleven years | Cytogenetic effects of ^{131}I administered with recombinant human thyrotropin hormone (rec-hTSH) on blood lymphocyte of Wistar rat | Induction of micronucleus by [DOTA, Tyr3]octreotate labeled with ^{131}I and ^{177}Lu in peripheral blood lymphocytes IN VITRO |

Sitio desarrollado por SISIB - Universidad de Chile