

Morphometric analysis of rat parameters during an animal model of colorectal cancer

Silva-Reis R.^{1*}, Castro-Ribeiro C.¹, Ribeiro-Silva CM.¹, Mendes-Gonçalves M.¹, Ferreira T.¹, Pires M. J.¹, Ferreira R.², Gama A.¹, Faustino-Rocha A.^{1,3}, Venâncio C.¹, Oliveira P.¹

¹ CITAB, Department of Veterinary Sciences, University of Trás-os-Montes and Alto Douro (UTAD), Portugal

² QOPNA, Department of Chemistry, University of Aveiro, Portugal

³ Faculty of Veterinary Medicine, Lusophone University of Humanities and Technologies, Lisbon, Portugal

* ritareis96@hotmail.com

Keywords: Chemical carcinogenesis, 1,2-Dimethylhydrazine, humane endpoints, morphometric parameters

Colorectal cancer is one of the leading causes of death by cancer worldwide. Animal models have been used in experimental research to find new solutions for old biomedical questions. This research aimed to make a contribution to characterize the rat model of colorectal cancer. Twelve male Wistar rats obtained from Charles River were randomly divided into two groups: control group and induced group. All ethical issues were considered, following the guidelines of the Portuguese *Direção Geral de Alimentação e Veterinária* (approval number 010535). Animals from the induced group received a weekly intraperitoneal injection of N, N'-Dimethylhydrazine (DMH), for seven consecutive weeks. All rats were monitored for signs of distress, weight loss, and food and water consumption. Abdominal ultrasound examinations were performed before the first DMH administration and the animals' sacrifice. Thirteen weeks later, all surviving animals were sacrificed, organs and blood were collected. Animals from control group showed a higher mean body weight. The mean food consumption of group II was lower in the weeks of the administration ($p < 0.05$). The mean relative weight of soleus was lower in induced animals when compared to the control animals ($p < 0.005$), which may suggest the development of anorexia. Although there were no significant differences in colon's weight, induced animals had shorter colon. The microhematocrit was not different between groups. The ultrasound examination showed a high vascularized abdominal mass in induced animals. Some induced animals had a swollen abdomen which difficult the ultrasound examination. The animals showed little changes in their biological parameters, suggesting that the disease was at an early stage. Histological analysis of animals' organs will provide a better perception of the colorectal cancer induction.

XI Jornadas de Genética e Biotecnologia
I Jornadas Ibéricas de Genética y Biotecnología

Morphometric analysis of rat parameters during an animal model of colorectal cancer

Rita Silva-Reis, Catarina Castro-Ribeiro, CM Ribeiro-Silva, Mariana Mendes-Gonçalves, Tiago Ferreira, M. J. Pires, Rita Ferreira, Adelina Gama, Ana I Faustino-Rocha, Carlos Venâncio, Paula A. Oliveira

