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Data Article

Data on morphometric analysis of the pancreatic islets from C57BL/6 and BALB/c mice

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ABSTRACT

The endocrine portion of the pancreas, which is characterized by pancreatic islets, has been widely investigated among different species. The BALB/c and C57BL/6 mice are extensively used in experimental research, and the morphometric differences in the pancreatic islets of these animals have not been evaluated so far. Thus, our data have a comparative perspective related to the morphometric analysis of area, diameters, circularity, and density of pancreatic islets from BALB/c and C57BL/6 mice. The data presented here are focused to evaluate the differences in morphology of pancreatic islets of two common laboratory mouse strains.

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Specifications Table

Subject area	Biology
More specific subject area	Morphometric
Type of data	Graph
How data was acquired	The images of the histological sections of pancreas were obtained using a light microscope light fitted with a digital camera (Evolution MP 5.0; Media Cibernetic Inc., USA) and the Image Pro Plus software (Media Cibernetic Inc., USA). These images were analyzed by ImageJ software to measure the area, major diameter, minor diameter, circularity, and density of pancreatic islets.
Data format	Analyzed and graphed
Experimental factors	The pancreases was dehydrated in ethanol, diaphonized in xylene, and embedded in paraffin. The histological sections were cut at a thickness of 7 μm and were stained with hematoxylin-eosin (H&E).
Experimental features	Quantification of the area, major diameter, minor diameter, circularity, and density of pancreatic islets by morphometric analysis.
Data source location	Federal University of the Triângulo Mineiro, Brazil
Data accessibility	Data is within this article.

Value of the data

- The description of the differences in pancreatic islets between BALB/c and C57BL/6 mice favors new perspectives on work with pancreatic experimental models [1–4].
- The data demonstrate the morphometric analysis of the pancreatic islets from mice using ImageJ and the DeHoff principle, taking this report as application guidelines.
- These data are useful for researchers interested in analyzing the effectiveness and changes to the pancreatic islets in situations such as pancreatitis, diabetes mellitus, and xenotransplantation.

1. Data

Fig. 1 shows that the macroscopic pancreatic area of the BALB/c and C57BL/6 mice was not significantly different. The data related to the area and diameter of the pancreatic islets in the C57BL/6 mice were significantly lower than those of BALB/c mice (Fig. 2A–C). In contrast, the circularity of pancreatic islets did not significantly differ between the BALB/c and C57BL/6 mice (Fig. 2D). Fig. 3 shows that the average density of pancreatic islets was significantly higher in the C57BL/6 mice compared to BALB/c mice.

2. Experimental design, materials and methods

2.1. Materials

6-month-old BALB/c and C57BL/6 male mice were bred and maintained under standard conditions in the animal house of the Department of Cellular Biology in the Federal University of Triangulo Mineiro (UFTM). The animal studies were approved by the Ethical Committee in Animal Research of the Universidade Federal do Triângulo Mineiro (UFTM) (protocol no. 113/2009) and were conducted in accordance with the Ethical Principles in Animal Research adopted by the Brazilian College of Animal Experimentation.