

Vliianie sul'fata kadmiia i khlorida strontsiia na sodержanie glikogena v gepatotsitakh krys raznogo vozrasta.

[Effect of cadmium sulfate and strontium chloride on the glycogen content in hepatocytes of rats of various ages].

Автор:Мамырбаева, Z Zh; Shalakhmetova, T M; Kudriavtseva, M V; Kudriavtsev, B N

Тsitologiia

Том:40

Выпуск:5

Стр.:432-44

Опубликовано:1998

Аннотация

Cytophotometry and image analysis being used, hepatocyte glycogen contents were measured in periportal and pericentral zones of liver lobules at different stages (1, 7, 14, 21, 30, 90, 180 and 365 days) of postnatal development of both intact rats and rats exposed to chronic CdSO₄ (1 mg/kg body weight) and SrSO₄ (6.5 mg/kg body weight) intoxication. The glycogen content in hepatocytes of intact rats increased continuously in the course of development being most highest at the initial stage of development. The glycogen content ratio in cells of portal and central zones of liver lobules varied during ontogenesis. The maximum value of this ratio is reached on the 21st day after the rat birth, dropping sharply at later age to reach its minimum in adults. Intoxication of rats by Cd²⁺ and Sr²⁺ within 1-90 days interval reduced hepatocyte glycogen levels, compared to normal liver. The prolongation of rat treatment with heavy metals for 90-365 days led to glycogen accumulation in hepatocytes. Rat intoxication with heavy metals for 1 year brought about the increase in both glycogen content per cell and glycogen concentration. Cd²⁺ treatment for 30-90 days resulted in glycogen accumulation inhibition in both the investigated zones of liver lobules. Thereafter an increased glycogen accumulation took place in hepatocytes of the portal and central liver lobules. Following Cd²⁺ treatment, the value of the ratios of glycogen levels in the portal and central liver lobules was lower than in the normal liver on all stages of the postnatal rat development. The lowest value (< 1.0) of this ratio was reached in the cirrhotic liver. Distinct from Cd²⁺ treatment of rats, the treatment with Sr²⁺ does not lead to significant changes in glycogen levels in cells of different zones of liver lobules. Nevertheless certain destructive changes in glycogen-forming function of hepatocytes after Sr²⁺ treatment are apparent. This is suggested from the lower glycogen levels in the portal and central zones of liver lobules on 30-180 days interval compared to the normal liver. Besides, the values of ratios in glycogen levels in the portal and central zones of liver lobules in 14 and 21 days old rats was noticeably lower than in the intact rats of the same age.

Информация об авторе

Адрес:Institute of General Genetics and Cytology, Academy of Sciences of Kazakh Republic, Kazakh National University, Almaty.

Категории/классификация

Направления исследования:Physiology; Toxicology; Imaging Science & Photographic Technology; Gastroenterology & Hepatology; Pharmacology & Pharmacy; Biochemistry & Molecular Biology (предоставленные Thomson Reuters)

Термины MeSH:

	Заголовок	Классификатор
Aging		*metabolism pathology
Animals		
Cadmium Compounds		*poisoning
Image Processing, Computer-Assisted		
Liver		*drug effects pathology
Liver Glycogen		*metabolism
Rats		
Strontium		*poisoning
Sulfates		*poisoning

Химические:

Реестровый номер	Содержимое
0	Cadmium Compounds
0	Liver Glycogen
0	Sulfates
947UNF3Z6O	cadmium sulfate
EKE8PS9J6Z	strontium chloride
YZS2RPE8LE	Strontium

Информация о документе

Тип документа:English Abstract; Journal Article

Язык:Russian

PubMed ID:9695241

Уникальный идентификатор NLM:0417363

Дата создания: 08 Sep 1998 Дата завершения: 08 Sep 1998 Дата проверки: 21 Nov 2013

Страна: RUSSIA

ISSN:0041-3771

Другая информация

Подвыборка цитирования:Index Medicus

Состояние:MEDLINE