an important task. To this end, several techniques have been proposed with the help of collagen with the ordering of their structure and an increase in the thermostability of the biopolymer. One such substance is dihydroquercetin (DHQ) (3). Our work was aimed at solving issues related to the selection of the optimal viscosity of solutions and the concentration of dosing agents to increase the depolymerization time at room temperature (23 ° C) and at 37 ° C.

Material and methods In the study we used the following chemical reagents: gelatin (Reahim, Russia), dihydroquercetin (Ametis, Russia) and arabinogalactan (Ametis, Russia). The optimum concentration of gelatin was selected experimentally using a prototype of an extrusion type biological printer. To this end, gelatin solutions of 5, 10, 15, 20, 25 and 30% were prepared in physiological saline. The evaluation was made on the basis of the determination of the printing time, the size of the obtained polymer filament, and the polymerization time of the gelatin solution in a container with biochernil. Based on the data obtained, two optimal concentrations of gelatin were determined for use as biological inks - 15% and 20%.

The modification was carried out by adding to the gelatin solution 7.5%, 10%, 12% of the solutions of dihydroquercetin and arabinogalactan (in a 1:3 weight ratio) in physiological saline.

Results The thermal stability of the samples was studied under conditions of room temperature (23 ° C) and at 37 ° C. The time of depolymerization of the samples and the time of their complete dissociation into solution were studied. The results are shown in Table 1.

Table №1. The study of the thermal stability of gelatin solutions

Sample	23°C (completedissociation)	37°C (startofdissolution)	37°C (completedissociation)
20% gelatin	20 hours	1 min	1 min 10 sec
20% gelatin + 7,5% DHQ/Ag (9:1 ratio)	22 hours	1 min 50 sec	3 min
20% gelatin + 10% DHQ/Ag (9:1ratio)	>24hours	2 min 10 sec	3 min 20 sec
20%gelatin + 12% DHQ/Ag (9:1 ratio)	> 24 hours	1 min 55 sec	4 min 55 sec

Conclusion From the results obtained, it can be seen that the addition of a solution of dihydroquercetin with arabinogalactan in a 1:3 weight ratio to a 20% solution of gelatin increases the thermal stability of the latter. In this case, a concentration-dependent effect is observed. The obtained data testify to the possible use of dihydroquercetin as a modifying agent for improving physical properties of gelatin, which can find application in the field of biological printing and regenerative medicine.

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OPTIMIZATION OF ESTABLISHMENT OF DIABETIC NEPHROPATHY RAT MODEL WITH DIFFERENT DIETARY PATTERNS

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Abstract:Objective:To investigate the feasibility and superiority of a rat model of diabetic nephropathy induced by intragastric administration of fat emulsion ,unilateral nephritic resection and STZ in rats.Methods Respectively, by fat emulsion ,unilateral nephrectomy combined with STZ and high fat and high sugar diet, unilateral nephrectomy combined with STZ induced diabetic nephropathy, the successful model was screened by comparing the sham operation group . All rats were put to death after 4 weeks, measuring the blood sugar, blood lipid, 24 h urine protein, urine trace albumin, serum creatinine, blood urea nitrogen.Results:To compared with high fat and high sugar group,the fat emulsion group's body quality presents the negative growth, water volume and urine volume increased dramatically,24h urine protein, urine trace albumin.Conclusion:It is feasible to establish a rat model of diabetic nephropathy by means of fat emulsion and unilateral nephrectomy combined with STZ.

Key words:Diabetic nephropathy;Fat emulsion;Chain urea with cephalosporins;Unilateral nephritic resection

Diabetic Nephropathy(DN)is one of the most common chronic microvascular complications of diabetes (Diabetic Mellitus, DM)[1], which is the leading cause of end-stage renal disease (ESRD) and is diabetes.

1 Instruments and Methods

1.1 Instruments GM260 Reiter blood glucose tester, Benazepril hydrochloride tablets, Hitachi 7600 automatic biochemical tester, KDC-160HR high-speed refrigerated centrifuge, metabolic cage, JA2003 precision electronic balance, XMTD-204 water bath, SB-5200DT Ultrasonic cleaning machine, streptozotocin STZ.

1.2 Methods

Fifty-five rats were randomly selected from the group consisting of S group and 15 rats (group B),15 as N group,and 15 as group Y. After fasting for 12 h, the rats in group M, group N and group Y were treated with 10% chloral hydrate (3.5 mL · kg-1) for right renal excision. After two weeks of feeding, the body weight was recorded, fasting for 12 h, group M, group N and group Y withSTZ [2].The rats in group Y were treated with benazepril hydrochloride daily. During the period, the body weight and urine volume were measured every week. The blood glucose and urine sugar were measured every 2 weeks. Before the end of the experiment, fasting and collecting 24 h urine and urine were collected. Rats, the abdominal aorta blood, then take the kidney to do pathological examination.

2 Results

2.1 Survival and Modulus Rate

All the survivors of group S were killed in 1 group, and the excretion rate of 24 h urinary microprotein was> 30 mg / (kg .d). The blood glucose of 16 rats was less than 16.7 mmol·L-1, Mold to be removed, the molding rate of 73%. N group 1 rats were injected with STZ injection, 1 blood glucose <16.7 mmol·L-1, 2 cases were not modeled, the rate was 87%. Y group 1 died of a nephrectomy, a total of 1 non-mode to be removed into the mold rate was 93%.

2.2 Weight, Blood Sugar, Urine Changes

Weight was shown that the weight of the rats in the M, N and Y groups was significantly lower than that in the S group at 2 to 8 weeks (P <0.01). Blood glucose was shown that there was no significant difference in blood glucose level between 6.1 and 9.5 mmol·L-1 in S, M, N and Y 4 groups at week 2 (P> 0.05) (P <0.01). The urine volume is shown that second weeks, M, N, Y, S 4 groups of rats urine output remained at about 13 mL, there was no significant difference (P > 0.05), 4-8 M, N, Y 3 week group were higher than S group, the difference was significant (P < 0.01).

2.3 Kidney Morphological Changes

Sham operation group: a certain number of glomeruli can be observed under the microscope, clearly visible small cysts, and glomerular size, basement membrane and mesangial stromal structure is normal, renal tubular epithelial cells arranged clear, small lumen Rules.Model N group: compared with the model M group, with significant glomerular hypertrophy, glomerular basement membrane thickening and mesangial matrix increased significantly, the number of glomerular reduction, renal tubular expansion, and accompanied by interstitial light Degree of fibroblast proliferation.Positive control group: Compared with model N group, histopathological changes were significantly improved.

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ADVANCEON SINOMENINE IN TREATMENT OF CHRONIC NEPHRITIS

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Chronic nephritis is one of the most common medical diseases,early to improve renal blood flow, control of hypertension, diuretic swelling and reduce proteinuria as the main treatment.Modern prescriptions regard sinomenine as an important rheumatoid drug,was used commonly as the treatment of rheumatic diseases in the folk for hundreds of years. The study found that sinomenine has a significant immune regulation function, as well as mild sedation, analgesic, anti-inflammatory effect. This article mainly reports the development in treatment of chronic nephritis with sinomenine.

Chronic nephritis that is the chronic glomerulonephritis, clinical proteinuria, hematuria,high blood pressure, edema as the main performance,slow disease progression, and ultimately the development of chronic renal failure can be a group of immune diseases. In China, chronic nephritis is the leading cause of end-stage renal disease, the incidence of more than 48%.Sinomenine is a kind of bioactive constituents extracted from roots and stems of Han menispermaceae, and the application of sinomenine in kidney disease, treatment mechanism and related research progress are discussed.

Sinomenine is categorized as wind medicine, there removing wind and dampness,clearing and activating the channels and collaterals,inducing diuresis to reduce edema. “People’s Republic of China Pharmacopoeia”contained its efficacy as: “expelling wind-damp, through channels and collaterals, diuresis.”Modern pharmacological studies and clinical trials have found that sinomenine has a significant reduction in proteinuria, hematuria, improve renal function, inhibition of renal fibrosis, and has a mild side effects. Hereby describes the new mechanism research status