

Details of Technology

Name of Technology	Measurement of glomerular filtration rate (GFR) in various animals	Medical Treatment and Welfare
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Key words	glomerular filtration rate (GFR), iodixanol, rat, rabbit, cat, calf, horse, HPLC method	

What kind of technology is this?

Outline

Let's grasp the animal renal conditions accurately. The technology is useful especially for cats with chronic renal failure.

【Research output contents】

The method for measuring the glomerular filtration rate (GFR) with the blood concentration changes of inulin or iodixanol, a nonionic iso-osmotic X-ray contrast agent, was established (no urinary collection is needed). Compared with iohexol (Omnipaque[®]) used for a long time, iodixanol has less influence on the kidneys and its safety is high. As the measuring operation, after a single intravenous administration of iodixanol, blood is taken three times in a time-dependent manner to measure serum iodixanol concentrations by an HPLC method. After confirming the linear clearance of serum iodixanol concentrations, the area under the curve (AUC) is obtained to calculate the clearance (GFR) values. In our cumulative data in various animals, it has been confirmed that the concentrations of serum urea nitrogen (BUN) and creatinine increase only when GFR is decreased by 60% or more. Right now, we are collecting the clinical data.

What are its applications?

The technology can be used for the diagnosis of renal failure in various animals and for the appropriate use of the renal excretion type drugs.

Related patents None

Related materials