

Chronic Catheterization Of The Common Bile Duct In Rats

A method for chronic catheterization of the common bile duct provides a new technique in which bile is sampled without altering the normal physiologic flow of bile in rats. The catheterization technique allows bile to be siphoned through tubing into collecting tubes that are placed below the body level of the rat. When the catheter is not used for bile sampling, bile flows normally around the catheter to the intestine. The flow of bile is never obstructed using this technique.

The common bile duct is catheterized by first inserting a needle into the bile duct and then introducing the bile catheter over the needle. The bile catheter is connected to tubing that is externalized but remains sealed with the use of a heparin lock until needed.

AREAS OF APPLICATION

This technique can be useful in:

- Pharmacological studies, particularly drug development where the measurement of the disposition of drug into bile is important.

ADVANTAGES

- 100% of the bile can be collected using this method.
- The presence of the catheter does not alter hepatic function with respect to bile flow, bile acid flux, maximal indocyanine green biliary excretion, biliary gamma GT, and drug metabolism.
- Drug clearance of a drug cleared primarily by the liver was not altered for up to 21 days after catheter placement.
- Chronically catheterized rats are non-stressed for up to 14 days after catheterization.
- Decreased obstruction results in more accurate measurements.

THE TECHNOLOGY

Two commercial preparations of a chronically catheterized rat are available. In one preparation the bile duct is catheterized twice. A loop of tubing connects the two catheters and the bile duct is ligated between the two catheters. In this way the bile is forced through the catheters and the loop. In the second method, the bile duct is ligated and a catheter is inserted into the bile duct proximal to the ligation. This catheter is connected to a loop of tubing that is exteriorized and then inserted into the intestine.

PATENT

The method of bile catheterization with sampling technique is patent pending.

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