Aug 12, 2019

Measurement of Left Ventricular Hemodynamic Parameters in Intact Mice

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1 Works for me dx.doi.org/10.17504/protocols.io.3h3gj8n

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ABSTRACT

Summary:

This protocol describes the procedure used by the DiaComp for measuring left ventricular hemodynamic parameters in intact mice.

Diabetic Complication:

Cardiovascular

EXTERNAL LINK

https://www.diacomp.org/shared/document.aspx?id=43&docType=Protocol

1 **Measurement of in vivo cardiac contractile performance using a micro-manometer tipped catheter:**

Indices of left ventricular contractile performance are determined in mice under isoflurane anesthesia by percutaneously introducing a 1.4 Fr. Millar catheter into the carotid artery and gently advancing this into the left ventricular cavity. Pressure waves are recorded captured and analyzed with pClamp 8.2 software. This technique provides the following indices of left ventricular function.

(1) Left ventricular systolic pressure (LVSP) Units: mmHg

(2) Left ventricular end diastolic pressure (LVEDP) Units: mmHg

(3) Heart Rate Units: beats per minute

(4) Positive dP/dt – First derivative of LV pressure. This index is a measure of the rate of pressure development in the left ventricle. Units: mmHg/msec.

(5) Negative dP/dt – First derivative of LV pressure. This index is a measure of the rate of ventricular relaxation, or the rate of pressure decay in the LV Units: mmHg/msec.