

## **New animal behavioral pharmacology using wireless power supply and implantable sensors**

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Current animal behavioral studies have much room for improvement. Data-driven drug discovery research and AI research using big data have become hot topics in human clinical research. Radiotelemetry provides an alternative means of obtaining physiological measurements from awake and freely moving laboratory animals, without introducing stress artifacts. For researchers, especially those in the fields of pharmacology and toxicology, the technique may provide a valuable tool for predicting the effectiveness and safety of new compounds in humans. The current embedded type sensor has a built-in battery and is therefore large, and cannot be individually identified, so that simultaneous measurements cannot be made in multiple animals at the same time. We developed a compact telemetry system using a new electromagnetic power supply system. The new system can continuously measure long-term biometric data such as locomotor activity and body temperature in a plurality of individually identified mice. The excellent feature of this device is that biometric data can be measured by five individuals over a long period without changing the sensor embedded in the body. The newly-developed technology is an important tool for the stress-free collection of these physiologic data in small rodents, including mice.