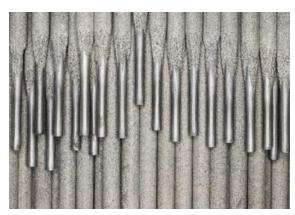
# **Novel Bipolar EMG Electrode for Small Animals**

# Accurate Placement with Superior Reliability in Data Collection for Obstructive Sleep Apnea Research & Development

#### **Background:**

The American Academy of Sleep Medicine reports that Obstructive Sleep Apnea (OSA) affects more than 25% of US adults over the age of 30 and OSA diagnoses are predicted to increase by 5-10% in the next decade. Researchers looking to develop new treatments for OSA rely on animal models in the early development stages which requires a means to make stable and reliable measurements of muscle activity in the animal's tongue to determine effectiveness of treatment. Traditionally used wire electrodes implanted in the



Source: https://stock.adobe.com/search?k=electrode

genioglossus muscle of mice often result in extended surgery time for placement, potential damage to the surrounding tissue, and produce unreliable data due to incorrect positioning and a relatively short lifetime of signal quality due to movements of the tongue.

#### **Technology:**

Scientists at Albany Medical College have developed a novel bipolar electrode suitable for short and long-term implantation in mice to record activity of superficial muscles (e.g., genioglossus and diaphragm). This bipolar electrode records data in a stable and reliable manner and is well tolerated by the mice for short and long-term use. It has several benefits over standard methods:

- Decreases implantation surgery time by over 75%
  - Minimal damage to surrounding tissue
- Increases accuracy of electrode placement up to 100% (from 30% with traditional methods)
  - Reduction of variability between individual mice and high stability in recording site, remaining in place for over a month and a half

## **Technology Readiness:**

Available for licensing

#### **Advantages:**

- Decreased surgery time
- Increased placement accuracy
- Stable for long term use
- Reliable data collection

# **Applications:**

- Use in small animal models on superficial muscles
- Short and long-term implantation

## **Intellectual Property:**

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