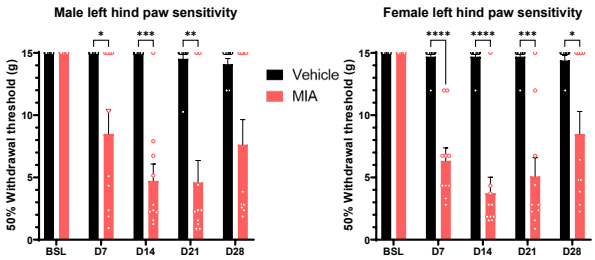
#489

# The NIH HEAL Initiative Preclinical Screening Platform for Pain (PSPP) Validation of the Monoiodoacetate (MIA) Model of Osteoarthritis Pain in the Rat

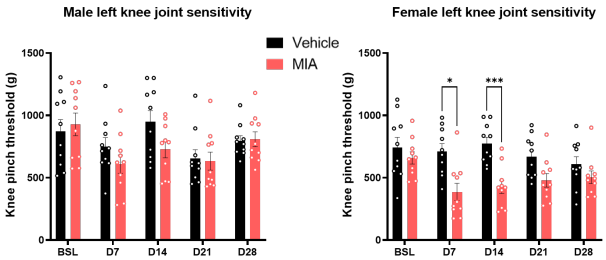
Sarah A. Woller[1], Mark O. Urban[2], Taleen Hanania[2], & Smriti Iyengar[1]
[1]Division of Translational Research, NINDS, NIH, Rockville, MD 20852
[2] PsychoGenics Inc., Paramus, NJ 07652

## Validation example: Assessment of PWT and dynamic weight bearing in the rat MIA model

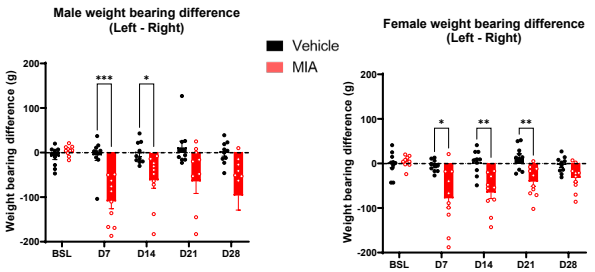
### Hind paw tactile sensitivity




### Hind limb knee joint pinch sensitivity

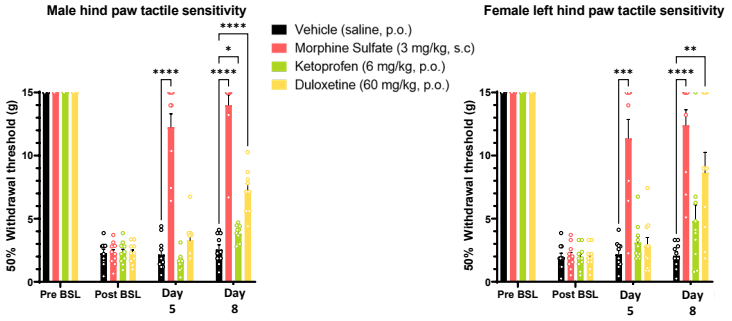



### Dynamic weight bearing

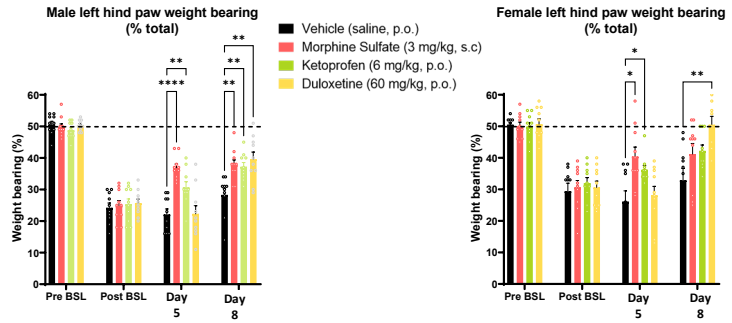



### Testing timeline


### Validation of tactile sensitivity




### Validation of dynamic weight bearing




## Summary

- Intraarticular injection of monoiodoacetate into the knee joint produced reliable, reproducible hind paw tactile hypersensitivity and hind paw weight bearing deficits in male and female Sprague Dawley rats over a period of weeks
- Additional pain behaviors such as knee joint pinch hypersensitivity were less robust and reproducible in male and female Sprague Dawley rats
- Repeated administration of the reference analgesic compounds ketoprofen and duloxetine produced greater efficacy in reversing hind paw tactile hypersensitivity and weight bearing deficits compared to a single dose
- The rat monoiodoacetate (MIA) model of osteoarthritis pain may be used to evaluate novel mechanisms and therapeutics for pain associated with osteoarthritis by examining effects following single and repeated administration.

This project has been funded in whole or in part with Federal funds from the National Institute of Neurological Disorders and Stroke, National Institutes of Health, Department of Health and Human Services, under Contract No. 75N95019D00026.

For eligibility and participation inquiries, contact Smriti Iyengar at: Smriti.Iyengar@nih.gov