# Novel, Non-Addictive Opioid Dimer DMX-101 Targets Peripheral Opioid Receptors For Treatment of Chronic Pain without Risks Associated with Traditional Opioids

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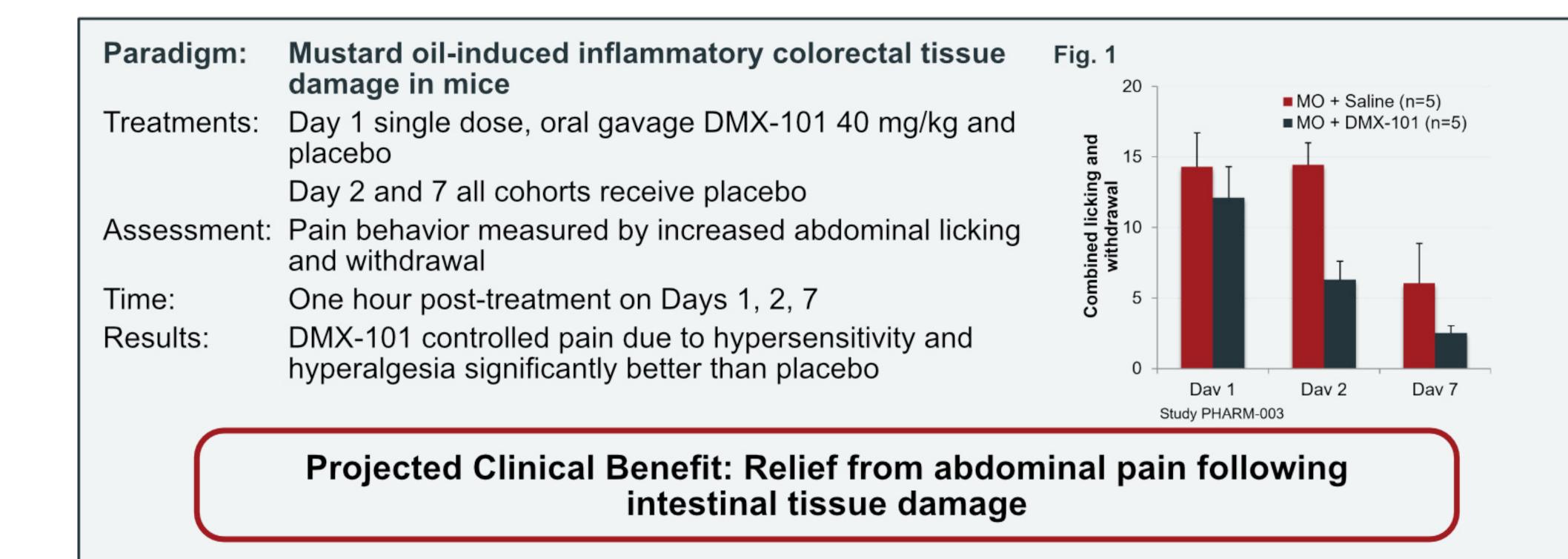
### Background

Fig. 2a

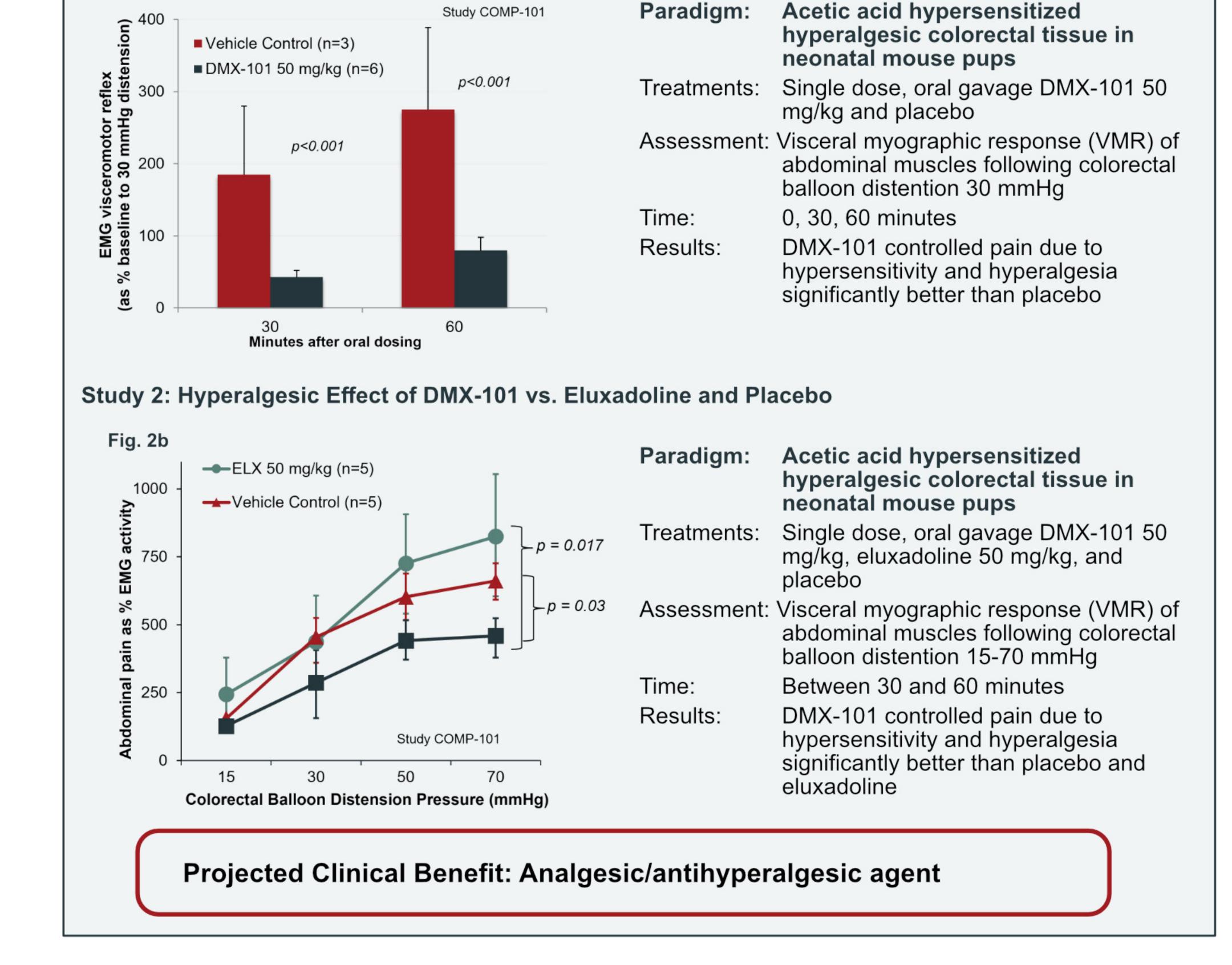
Although traditional opioids are effective in treating chronic severe pain, they are associated with significant CNS-mediated side effects and exposure of patients to risk of dependence [1]. Exclusive targeting of peripheral opioid receptors without CNS exposure should provide safe and effective management of chronic pain without the risk of addiction [2,3]. Despite up to 80% of opioid receptors located outside the CNS also mediating opiate analgesic effects [4], there is no available drug that acts at peripheral opioid receptor sites for the management of chronic pain.

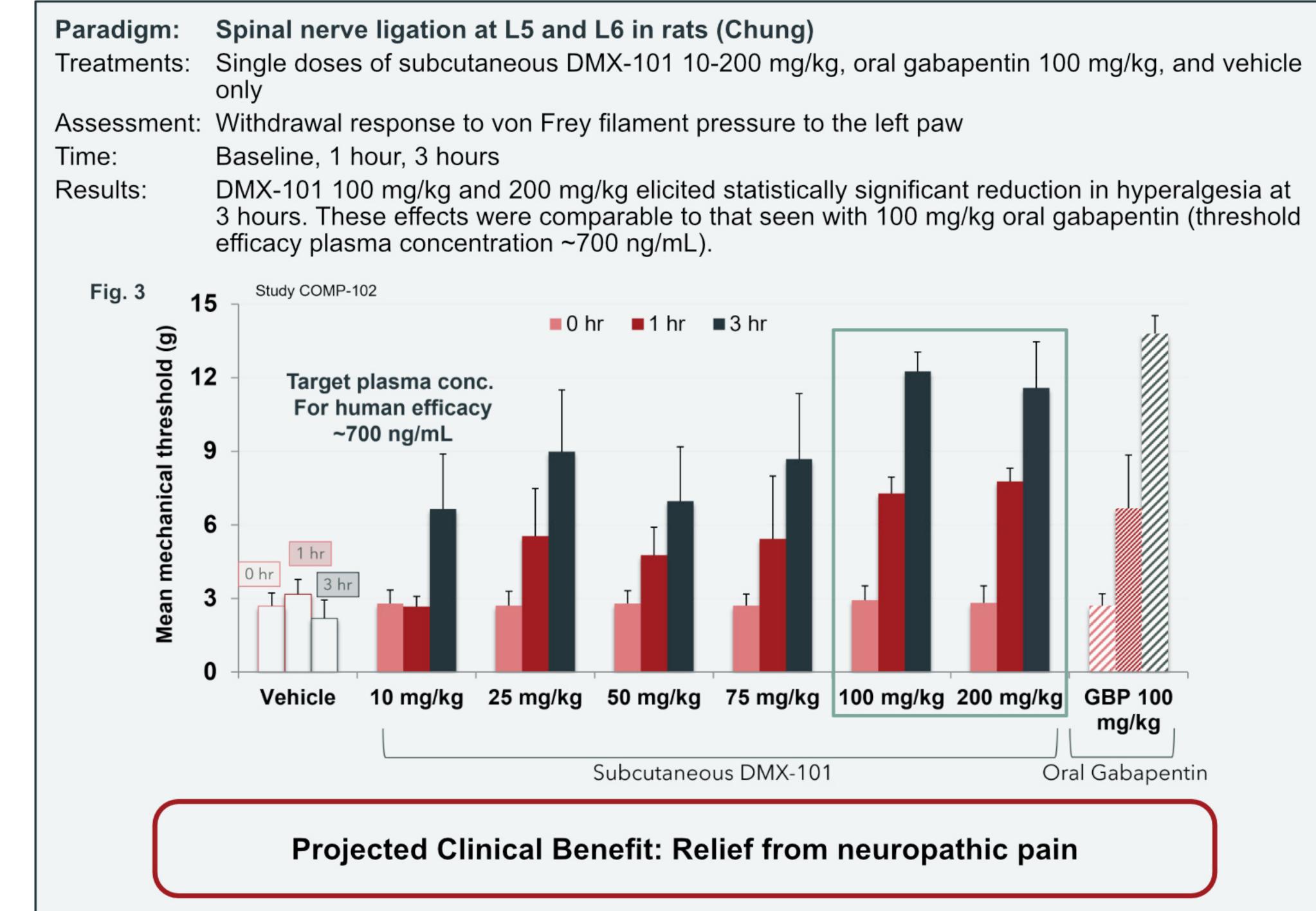
DMX-101 is a new chemical entity created by covalently linking two molecules of buprenorphine. After oral administration, DMX-101 is rapidly absorbed and distributed, but its high molecular weight prevents its crossing the blood-brain barrier, avoiding the unwanted effects of CNS involvement. Availability of a non-addictive opioid analgesic will also prevent initiation of traditional opioid use, a potential gateway to addiction.

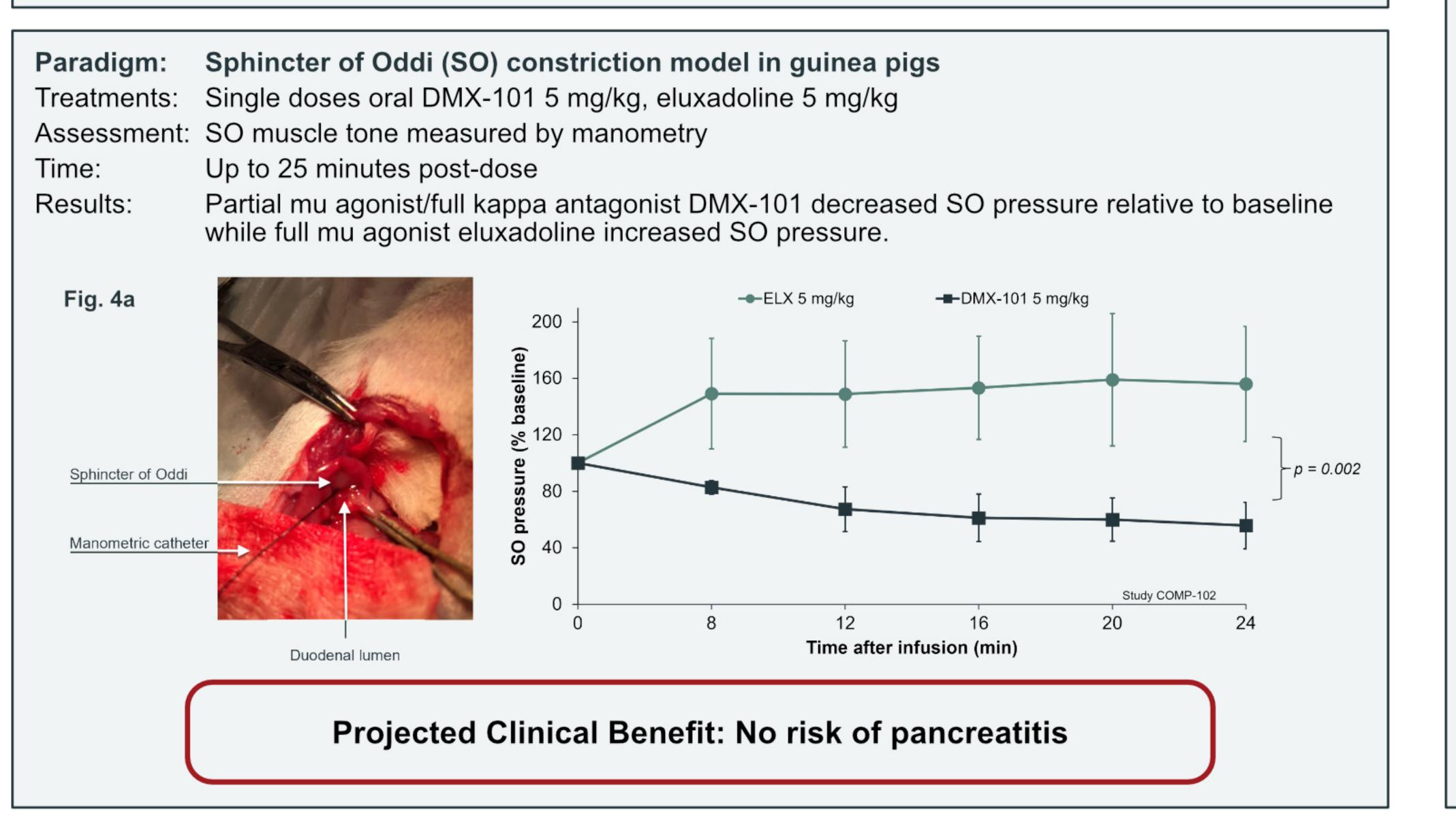
The following studies demonstrate DMX-101's efficacy in treating acute and neuropathic pain as well as safety and efficacy in the clinic.

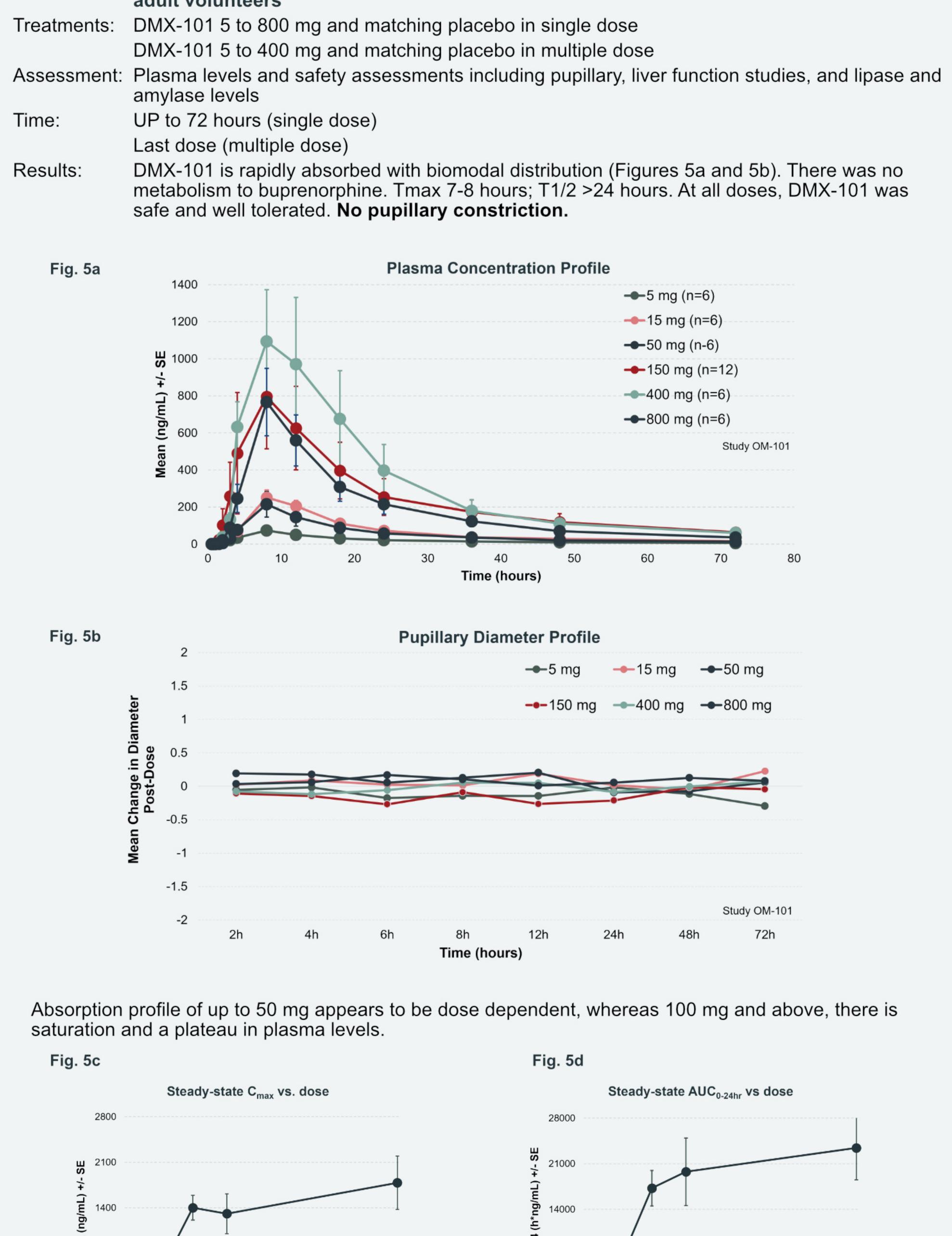


Study 1: Hyperalgesic Effect of DMX-101 vs. Placebo





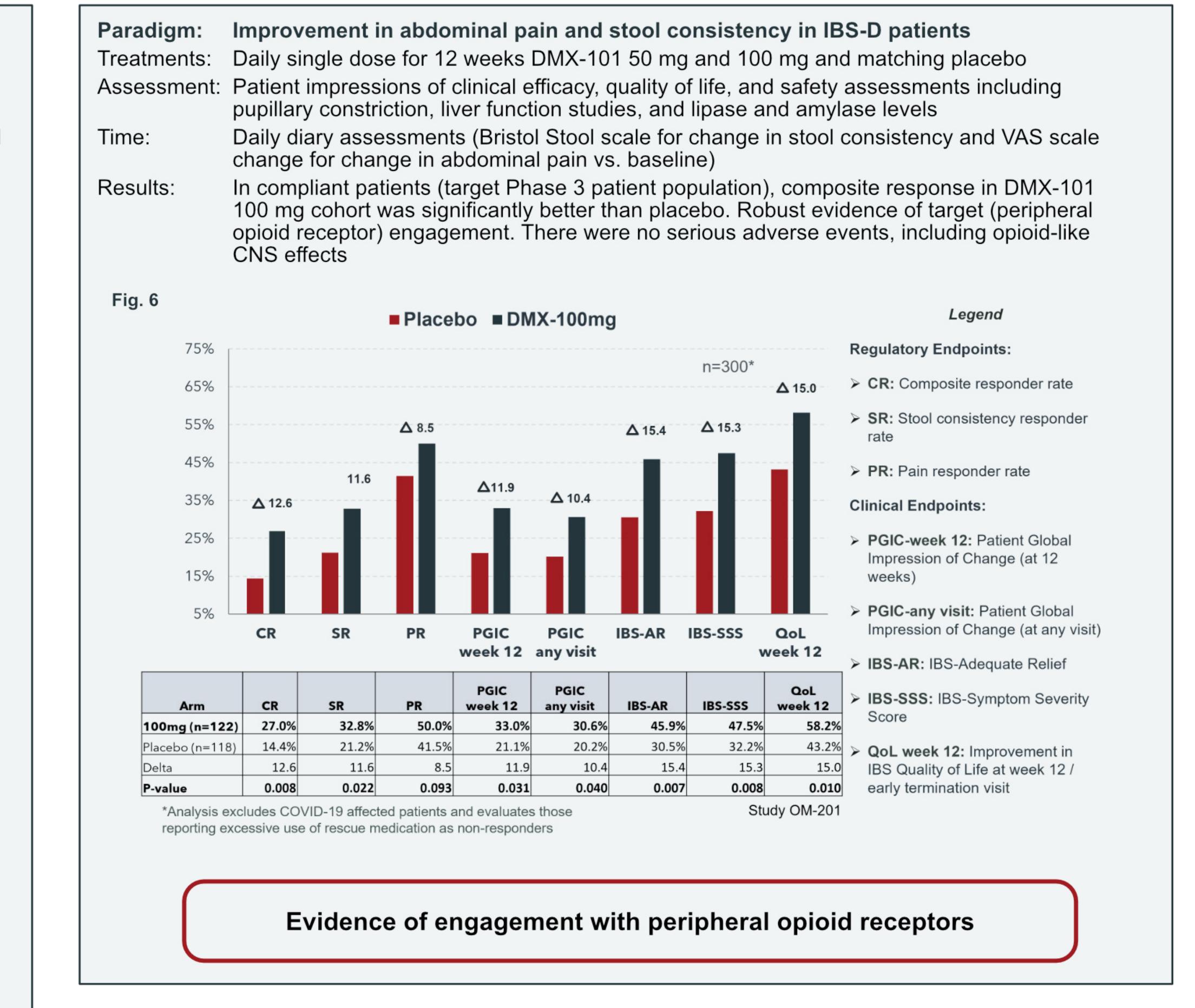




**Projected Clinical Benefit:** 

Orally available, peripherally acting analgesic with no CNS effects

Paradigm: Single ascending and multiple dose safety and pharmacokinetics studies in healthy



# Conclusion

DMX-101, a new chemical entity, demonstrated safety and robust engagement with peripheral opioid receptors in preclinical and clinical studies without the unwanted CNS side effects or acute pancreatitis risk of traditional opioids.

### Potential applications include:

- Chronic pain
- Gastrointestinal disorders

Societal Impact: Potential to decrease reliance on addictive opioids and prevent future cases of opioid abuse and dependence.

## Bibliography

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