

# Tampr-X: A Novel Technology to Combat Prescription Opioid Abuse

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The prescription opioid epidemic in the United States resulted in an astounding 49,068 deaths in 2017 alone (NIH), warranting URGENT attention. Besides the required policy changes, innovative technologies have been identified as a key strategy to combat the crisis. Abuse-deterrent formulations (ADFs) are recent innovations in the field that deter physical and chemical tampering of opioid products for abuse, while still providing safe use for pain. They target the expected ways of abuse for high opioid levels in the blood, such as crushing to snort or dissolving for injection. Despite the approval of various ADFs recently, there are limitations in their ability to resist abuse. To address the shortcomings, a tamper-resistant opioid technology (Tampr-X) has been developed over the past 2 years. Tampr-X is a protein matrix-based technology with a unique combination of ingredients that prevent product tampering. For example, the protein matrix prevents crushing, while high molecular-weight liquids resist the isolation of the drug through charring/sublimation. In a series of attempts to develop a successful technology that resists eight different abuse tests recommended by the US-FDA and experts in the field, a total of 38 attempts were made in the last two years using a model drug. Of those, three have been successful in resisting all 8 abuse tests. The high translational ability of Tampr-X technology is supported by its simple and low-cost of production (< \$0.10/dose), a filed US-patent, and recent interest of a strategic industry partners (non-profit). The novel Tampr-X technology is expected to provide significant relief to the opioid crisis prevailing in the United States today.

## Awards Won:

Drug, Chemical &

Associated Technologies Association (DCAT): Award of \$3,000.

National Institute on Drug Abuse, National Institutes of Health &  
the Friends of NIDA: First Award of \$2,500