



## **New Study Characterizes Detection of Hydrocodone and Morphine as Metabolites of Codeine in Oral Fluids**

**SAN DIEGO – Jan. 30, 2017** – Millennium Health, a leading health solutions company, announced the publication of a new study that identifies hydrocodone and morphine as metabolites in oral fluid using Liquid Chromatography with Tandem Mass Spectrometry (LC-MS/MS) in patients prescribed codeine. The study was published in the February 2017 issue of *Therapeutic Drug Monitoring*.

“Understanding that hydrocodone and morphine may be found as metabolites for patients prescribed codeine helps improve interpretation of oral fluid testing used to monitor patients prescribed opioids,” said Maria Guevara, Pharm.D., director of clinical affairs, education and training, Millennium Health. “In a clinical context, it could mean that a clinician does not falsely accuse a patient of having taken a concomitant medication.”

In the study, oral fluid samples were collected and submitted to Millennium for routine drug testing using LC-MS/MS. Consistent with previously published literature, codeine was the primary analyte detected in oral fluid after the use of codeine. In codeine-positive samples, hydrocodone, morphine, and nonhydrocodone were detected. In contrast to urine, where hydrocodone is typically detected as a minor metabolite of codeine, hydrocodone was the most commonly detected metabolite in oral fluid samples testing positive for codeine with reported prescriptions for codeine.

The results of the study suggest that care should be taken when interpreting hydrocodone positives in oral fluid test results, and that the use of codeine should be considered as one possible explanation for hydrocodone and morphine positives.

An abstract of the study can be found on the *Therapeutic Drug Monitoring* [website](#).

### **About Millennium Health**

Millennium Health is a leading health solutions company that delivers accurate, timely, clinically actionable information to inform the right treatment decisions for each patient. The company shares a unified belief that everyone has the right to safe and effective treatment and aims to deliver on that idea by providing clinicians and payers with effective tools and information to reach that goal. Millennium Health offers a comprehensive suite of services including Millennium PGT<sup>SM</sup>, Millennium UDT<sup>SM</sup> and Millennium OFT<sup>SM</sup>, which can be used to better tailor patient care. More information can be found at [www.millenniumhealth.com](http://www.millenniumhealth.com).

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