

## ROOM TEMPERATURE

## Specifications and Guidelines

### Usage Guidelines:

- Use supplied concentrated room temperature 10X buffer (RTB).
- Prepare master mix by combining the components in the following order: RTB, reagent grade water, internal standard in methanol, and IMCSzyme RT.
- Add the master mix to the urine sample and mix.
- **DO NOT VORTEX.**
- Incubate at room temperature 20-25 °C (do not apply heat).

### Content and Storage Guidelines:

#### Enzyme Solution:

Enzyme solution is stable at 2 - 8 °C for up to 24 months or expiration date on the bottle, in its original sealed package. The product is stable after opening for up to 12 months. **Do NOT freeze the enzyme solution.**

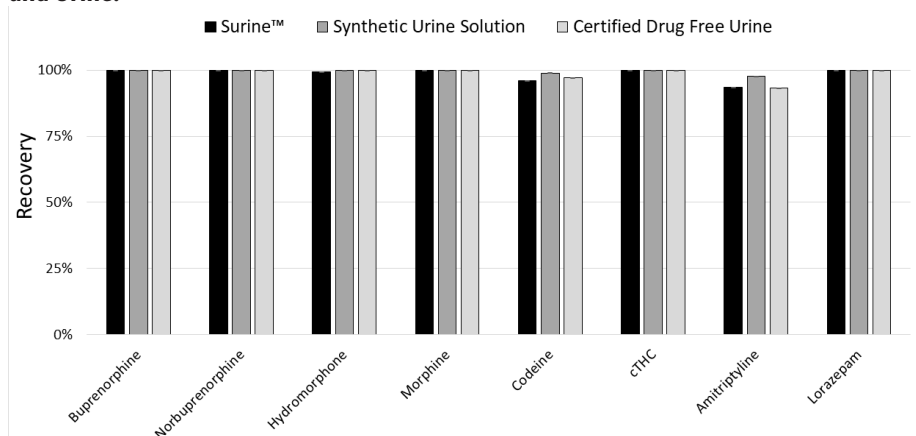
#### 10X Room Temperature Buffer

RTB is sterile filtered and is to be used with the enzyme solution to obtain optimal pH. The original solution is stable at 2 - 30 °C up to 24 months in its sealed package. Master mix solution (buffer, water and enzyme) is stable for 4 weeks. Internal standards each have their own stability and have not been evaluated by IMCS.

### Product Sterility:

IMCS products undergo strict quality control to ensure product sterility. The product can become contaminated if mishandled. Follow aseptic techniques to avoid contamination.

### Enzyme Performance based on Recommended Ratios of Buffer, water, IMCSzyme RT and Urine:

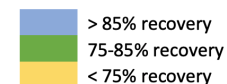


### Enzyme Performance at pH 4-7:

| Drug Analytes   | Activity at pH 5.5 (pmol/min/mg enzyme) | pH     |        |        |        |       |       |       |        |
|-----------------|---|--------|--------|--------|--------|-------|-------|-------|--------|
|                 |   | 4      | 4.5    | 5      | 5.5    | 6     | 6.5   | 7     |        |
| Opiates         | Morphine-3                              | 2090   | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
|                 | Hydromorphone                           | 1062   | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
|                 | Oxymorphone                             | 789    | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Green  |
|                 | Dihydrocodeine                          | 936    | Yellow | Blue   | Blue   | Blue  | Blue  | Blue  | Yellow |
|                 | Codeine                                 | 896    | Yellow | Blue   | Blue   | Blue  | Blue  | Blue  | Yellow |
| Opioids         | Tapentadol                              | 2900   | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
|                 | Norbuprenorphine                        | 30296  | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
|                 | Buprenorphine                           | 8876   | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
|                 | O-desmethyltramadol                     | 1144   | Blue   | Blue   | Blue   | Green | Green | Green | Green  |
| Benzodiazepines | Oxazepam                                | 7586   | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
|                 | Lorazepam                               | 39278  | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
|                 | Temazepam                               | 4561   | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |
| Anti-Depressant | Amitriptyline                           | 1256   | Yellow | Yellow | Yellow | Blue  | Blue  | Blue  | Blue   |
| Cannabinoids    | cTHC                                    | 198478 | Blue   | Blue   | Blue   | Blue  | Blue  | Blue  | Blue   |

#### Recommended Hydrolysis Reaction Set Up:

50  $\mu$ L Urine, 15  $\mu$ L RTB, 135  $\mu$ L Water, 10  $\mu$ L ISTD in methanol, 5  $\mu$ L IMCSzyme RT. Mix well and incubate at room temperature (20-25 °C) for 15 minutes.



<sup>1</sup>Zhang X, Sitasuwan P, Horvath G, Yang J, Nie Y, Marinova M, Lee LA, Wang Q. (2018). Increased activity of  $\beta$ -glucuronidase variants produced by site-directed mutagenesis. *Enzyme Microb Technol.* 109. 20-24.

### Contact and Support:

For questions, concerns or technical support please contact us:

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**Business Hours:** Monday-Friday from 9 a.m. - 5 p.m. EST.

Certificate of Analysis and Safety Data Sheets are available under "resources" at: [www.imcstips.com](http://www.imcstips.com).

### Product Warranty & Satisfaction Guarantee

IMCS warrants that this product conforms to the information contained in this publication at the time of the quality test date. The same efficient enzymatic hydrolysis result cannot be guaranteed without the use of the supplied buffer. **For R&D use only. Not for drug, household, or other use.**