

Recap: Which Opioid was Ingested???

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In the May 2018 edition of the Toxicology Times, we discussed that opioid metabolism can produce some unexpected, and some-time incongruous, results when comparing urine drug screen results to what was actually ingested. It is always a good idea to call the laboratory to interpret results in these cases. To recap:

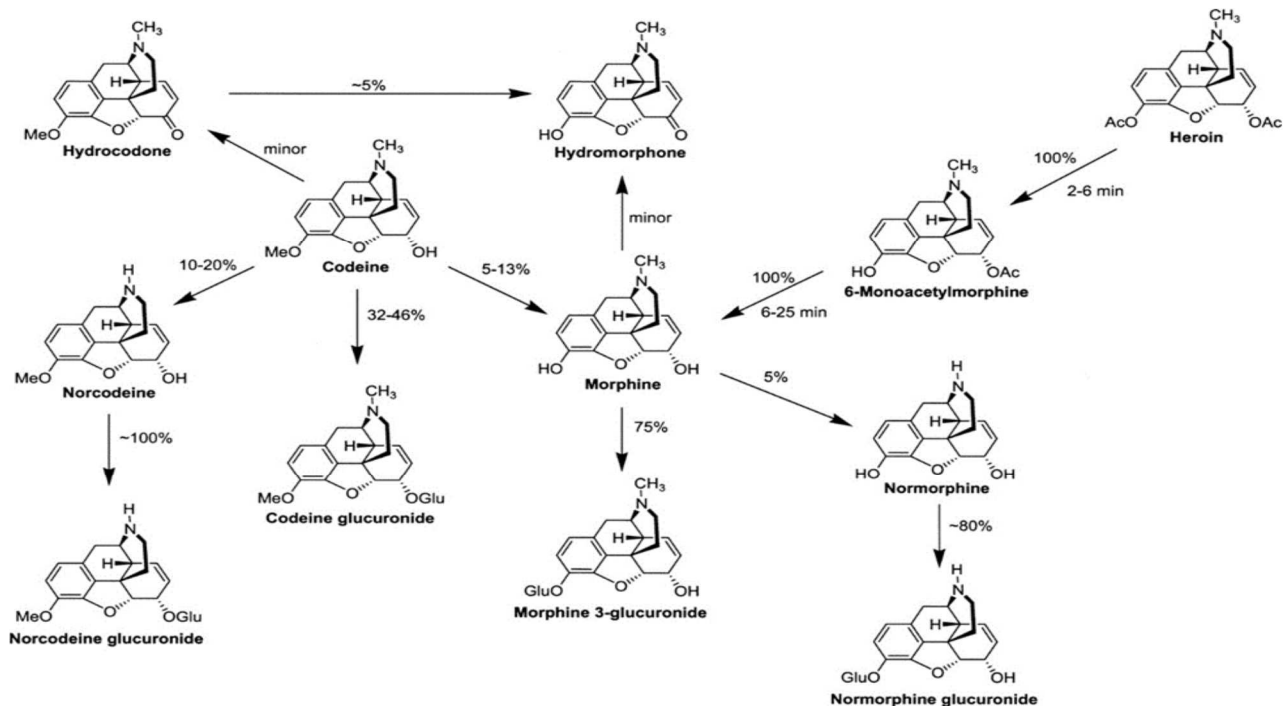
Drug Ingested	Major Metabolites	Minor Metabolites (may be present)
Codeine	Codeine, Morphine* C > M**	Hydrocodone (<10%)
Morphine	Morphine	Hydromorphone (<5%)
Hydrocodone	Hydrocodone and/or Hydromorphone	Hydromorphone (up to 100%)
Hydromorphone	Hydromorphone	Hydromorphone only
Oxycodone	Oxycodone and/or Oxymorphone	Oxymorphone (up to 100%)
Oxymorphone	Oxymorphone	Oxymorphone only
Heroin	6-Acetylmorphine***, Morphine	Hydromorphone (see Morphine)

*Morphine may be present but below the cutoff and therefore not reported

**Codeine greater than morphine

***6-Acetylmorphine may not be detected

Below please find a schematic on the interrelationship of opioids derived from natural sources. This explains the results found in the table above very well. Note that oxycodone and oxymorphone do not share in any of these metabolic pathways, although some of the same enzymes are used.



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