

## Development and Validation of Liquid Chromatography-Tandem Mass Spectrometry Method for Simultaneous Determination of Tramadol and its Phase I and II Metabolites in Human Urine

Figure No.	Figure Description
Figure S1	MS/MS of urine extract m/z 426.3138 corresponding to $[M + H]^+$ ion of O-desmethyl TD Glucuronide (M13)
Figure S2	MS/MS of urine extract m/z 456.4048 corresponding to $[M + H]^+$ ion of OH TD Glucuronide (M16)
Figure S3	MS/MS of urine extract m/z 412.1174 corresponding to $[M + H]^+$ ion of N,O-desmethyl TD Glucuronide (M15)
Figure S4	MS/MS of urine extract m/z 280.3817 corresponding to $[M + H]^+$ ion of OH TD (M6)
Figure S5	MS/MS of urine extract m/z 252.2158 corresponding to $[M + H]^+$ ion of OH-didesmethyl TD (M8)
Figure S6	MS/MS of urine extract m/z 266.4093 corresponding to $[M + H]^+$ ion of OH-O-desmethyl TD (M32)
Figure S7	MS/MS of urine extract m/z 360.4492 corresponding to $[M + H]^+$ ion of OH - TD Sulphate (M23)
Figure S8	MS/MS of urine extract m/z 302.4325 corresponding to $[M + H]^+$ ion of N,N,O-desmethyl TD Sulphate (M21)
Figure S9	MS/MS of urine extract m/z 316.4469 corresponding to $[M + H]^+$ ion of N,O-desmethyl TD Sulphate (M22)

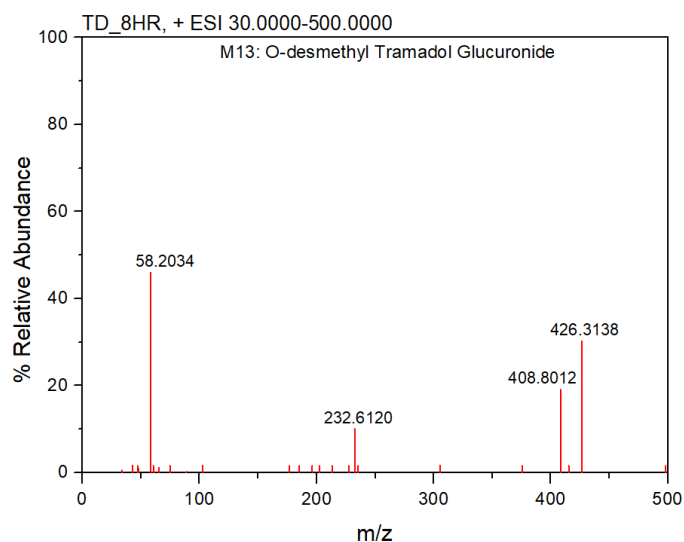


Figure S1. MS/MS of urine extract m/z 426.3138 corresponding to  $[M + H]^+$  ion of O-desmethyl TD Glucuronide (M13)

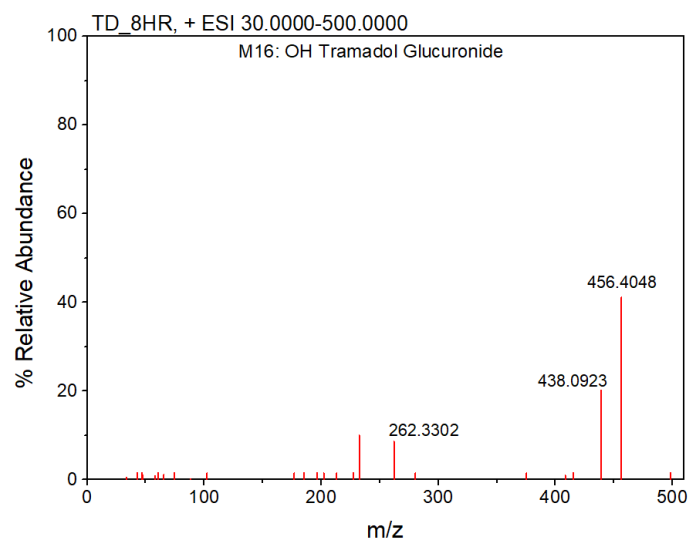


Figure S2. MS/MS of urine extract m/z 456.4048 corresponding to  $[M + H]^+$  ion of OH TD Glucuronide (M16)

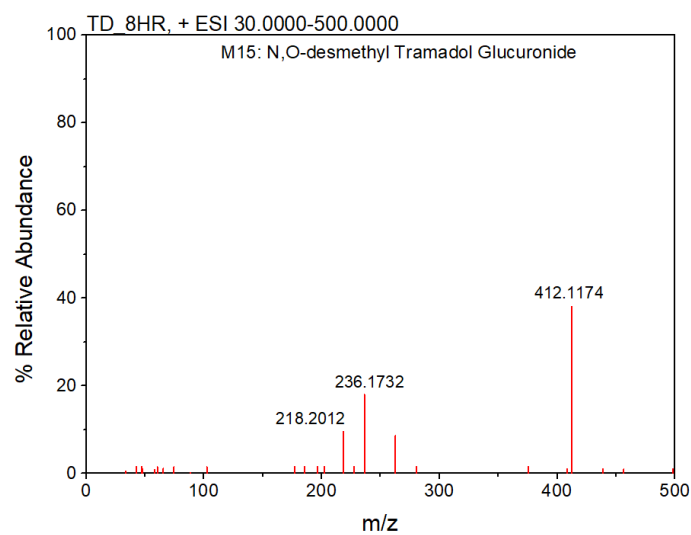


Figure S3. MS/MS of urine extract m/z 412.1174 corresponding to  $[M + H]^+$  ion of N,O-desmethyl TD Glucuronide (M15)

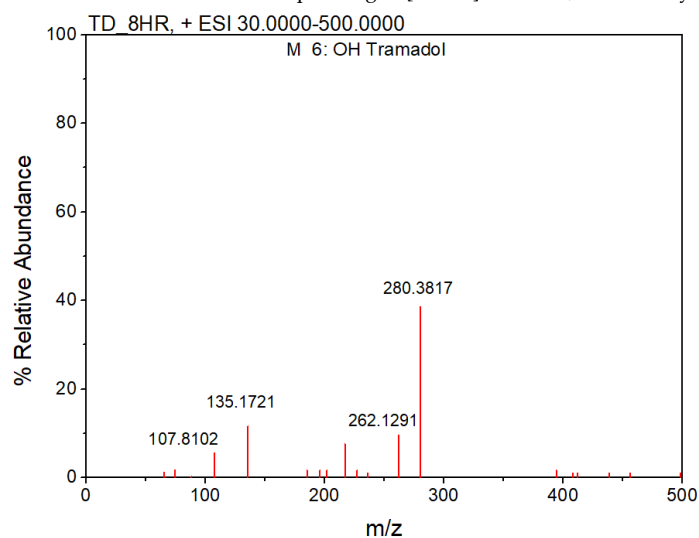


Figure S4. MS/MS of urine extract m/z 280.3817 corresponding to  $[M + H]^+$  ion of OH TD (M6)

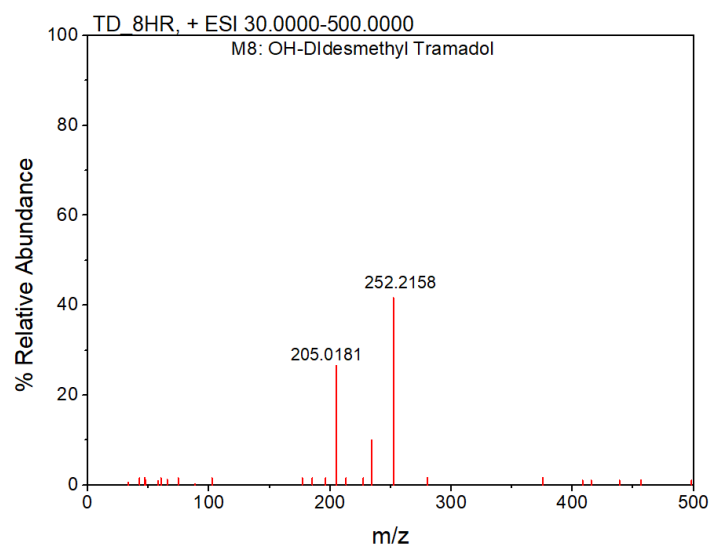


Figure S5. MS/MS of urine extract m/z 252.2158 corresponding to  $[M + H]^+$  ion of OH-didesmethyl TD (M8)

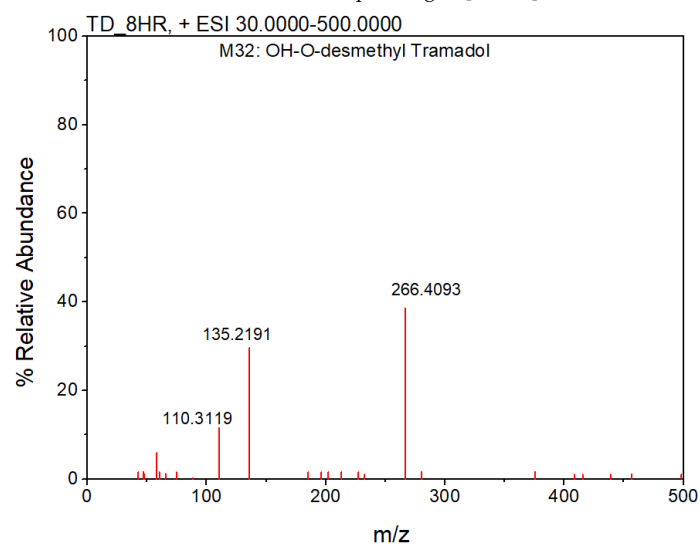


Figure S6. MS/MS of urine extract m/z 266.4093 corresponding to  $[M + H]^+$  ion of OH-O-desmethyl TD (M32)

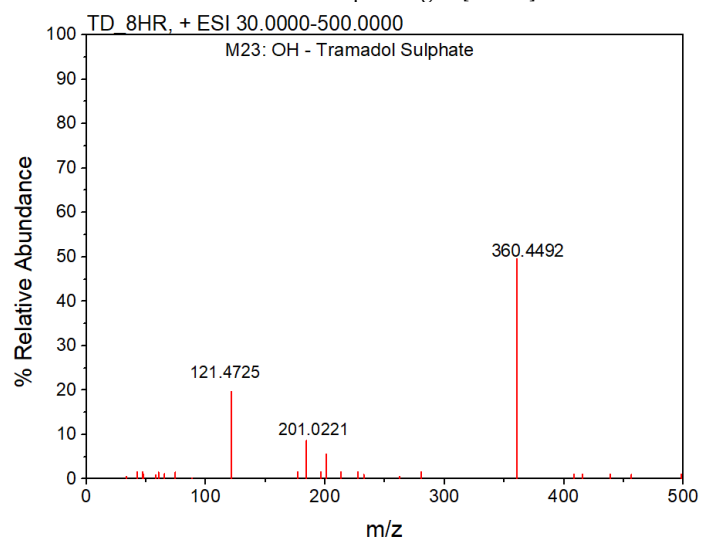


Figure S7. MS/MS of urine extract m/z 360.4492 corresponding to  $[M + H]^+$  ion of OH - TD Sulphate (M23)

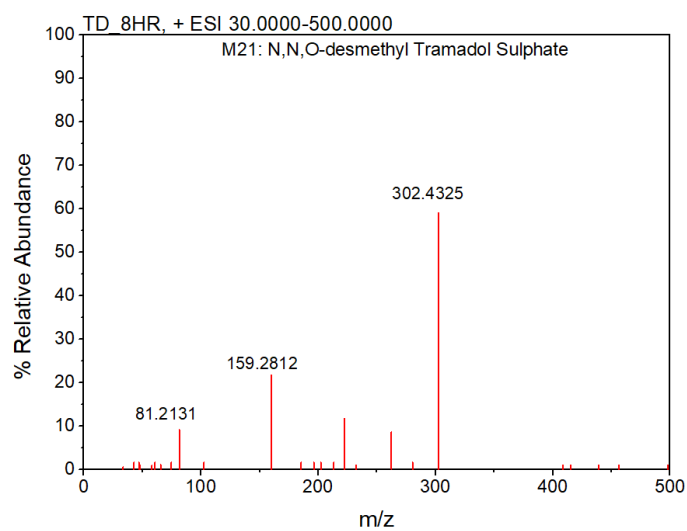


Figure S8. MS/MS of urine extract m/z 302.4325 corresponding to  $[M + H]^+$  ion of N,N,O-desmethyl TD Sulphate (M21)

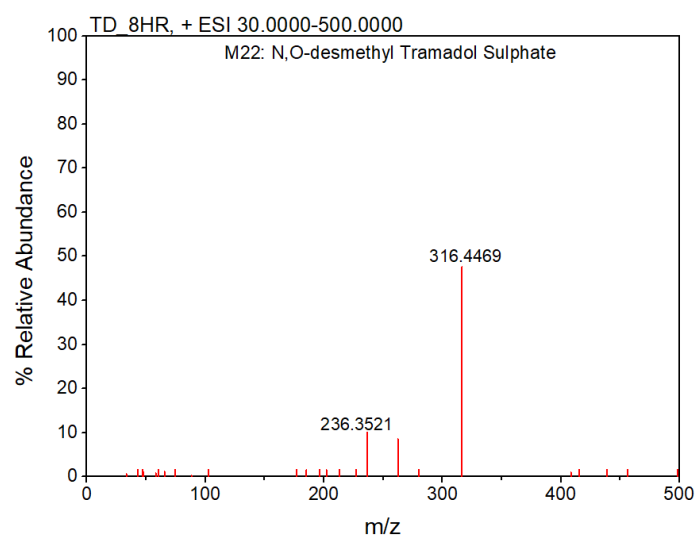


Figure S9. MS/MS of urine extract m/z 316.4469 corresponding to  $[M + H]^+$  ion of N,O-desmethyl TD Sulphate (M22)