Supplementary information
MetIDfyR, an open-source R package to decipher small-molecule drugs metabolism through high resolution mass spectrometry

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||: Equal contribution

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1 MetIDfyR dependencies

Package	Version
arrangements	1.1.8
BiocManager	1.30.10
doParallel	1.0.15
dplyr	0.8.3
ggplot2	3.2.1
ggpubr	0.2.4
ggrepel	0.8.1
htmlwidgets	1.5.1
MSnbase	2.12.0
mzR	2.20.0
optparse	1.6.4
pacman	0.5.1
plyr	1.8.5
RColorBrewer	1.1-2
Rcpp	1.0.3
Rdisop	1.46.0
readr	1.3.1
snow	0.4-3
stringr	1.4.0
svglite	1.2.2
tibble	2.1.3

2 Shiny App dependencies

Package	Version
dplyr	0.8.3
DT	0.11
magick	2.3
pacman	0.5.1
parallel	3.6.2
plyr	1.8.5
rclipboard	0.1.2
readr	1.3.1
rmarkdown	2.1
scales	1.1.0
shiny	1.4.0
shinyalert	1
shinyFiles	0.7.5
shinyjs	1.1
shinythemes	1.1.2
tibble	2.1.3

3 RIntensity calculation

$$R_{Intensity=}\begin{cases} 1 & \text{(if } I_{mz-RT} \geq I_{drug}\text{)} \\ \frac{I_{mz-RT}}{I_{drug}} & \text{(if } I_{mz-RT} < I_{drug}\text{)} \\ NA \textit{ (i.e. 0)} & \text{(if } I_{drug} = 0\text{)} \end{cases} \tag{1}$$

I_{mz-RT} = maxmimum intensity of putative metabolite

I_{drug} = maximum intensity of parent drug

4 Supplementary Figures

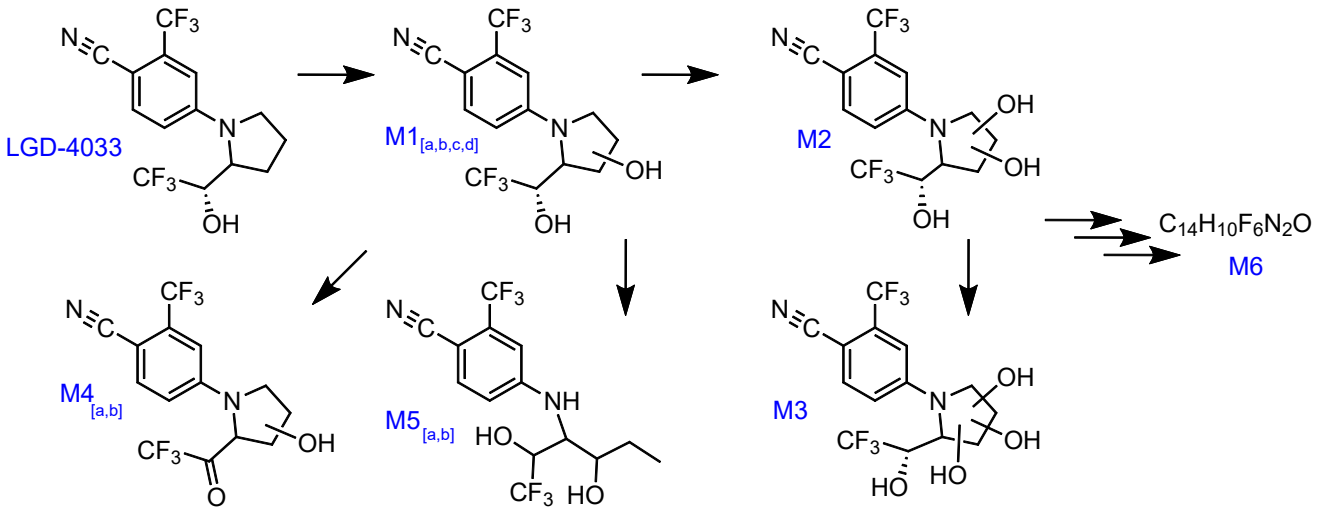

Figure S1: Structures of LGD-4033 and its metabolites according to Cutler *et al.* 2020.

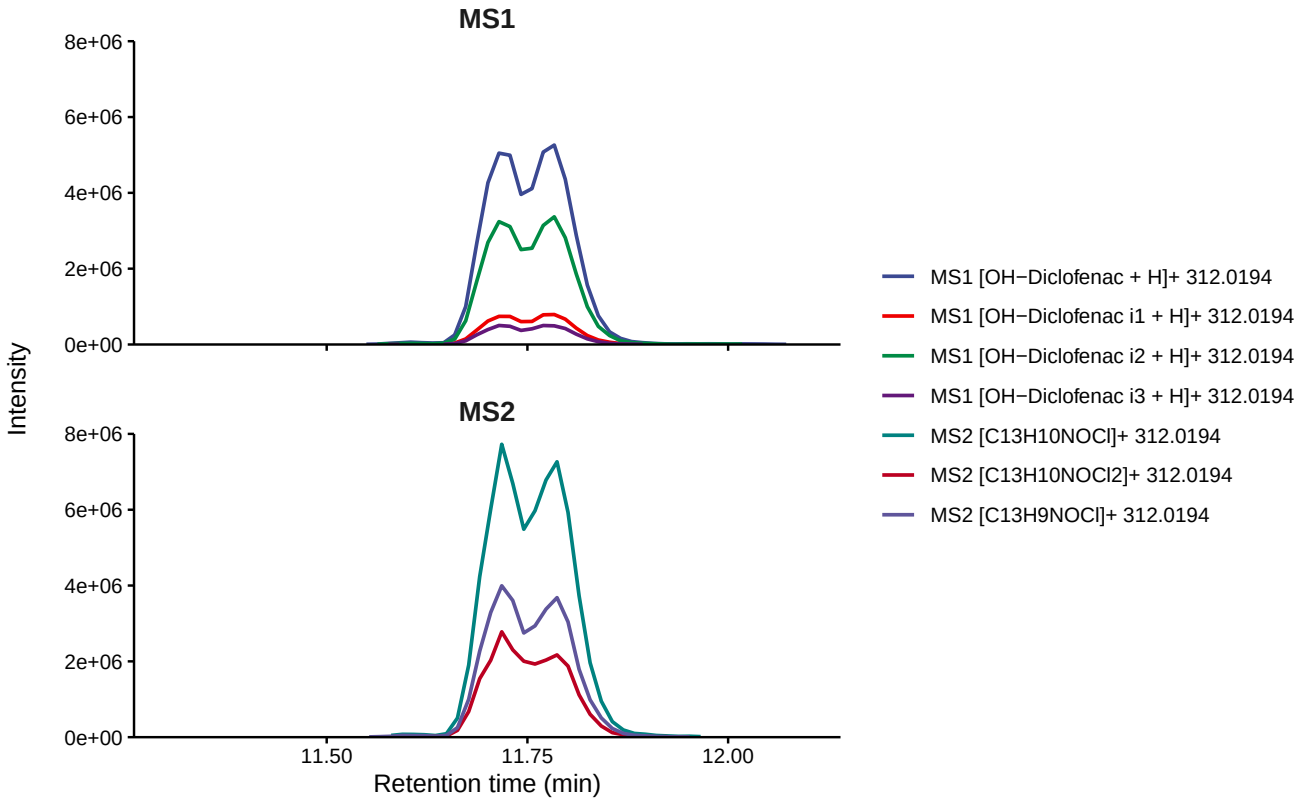

Figure S2: Detection of OH-diclofenac as a peak doublet after LC-HRMS/MS reinjection of phase I metabolism experiment using positive mode only LC-HRMS/MS method.

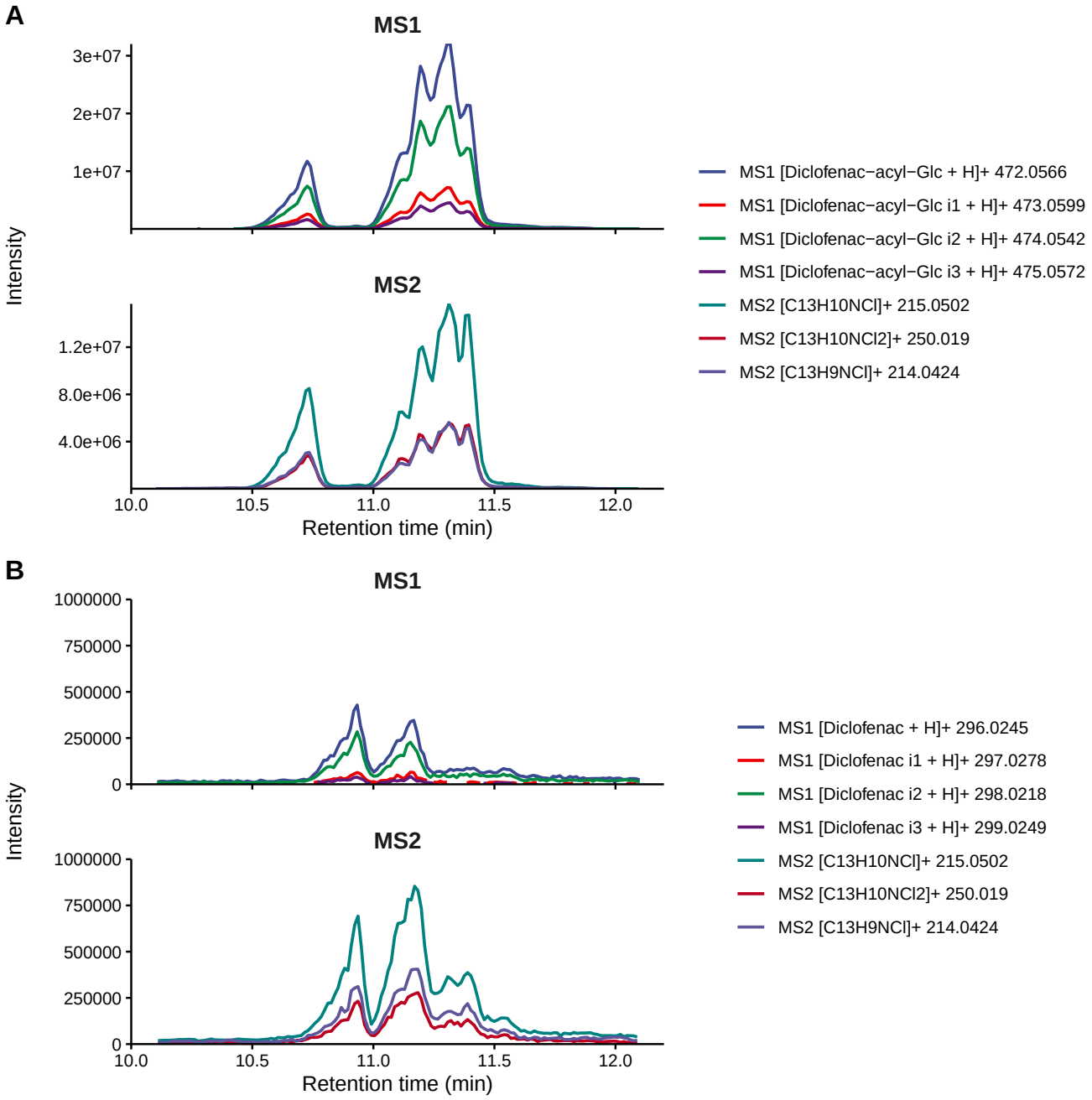

Figure S3: A. Detection of diclofenac-glucuronide isomers detected as diclofenac-acyl-Glc. B. Detection of glucuronide neutral loss after LC-HRMS/MS reinjection of phase II metabolism experiment using positive mode only LC-HRMS/MS method.

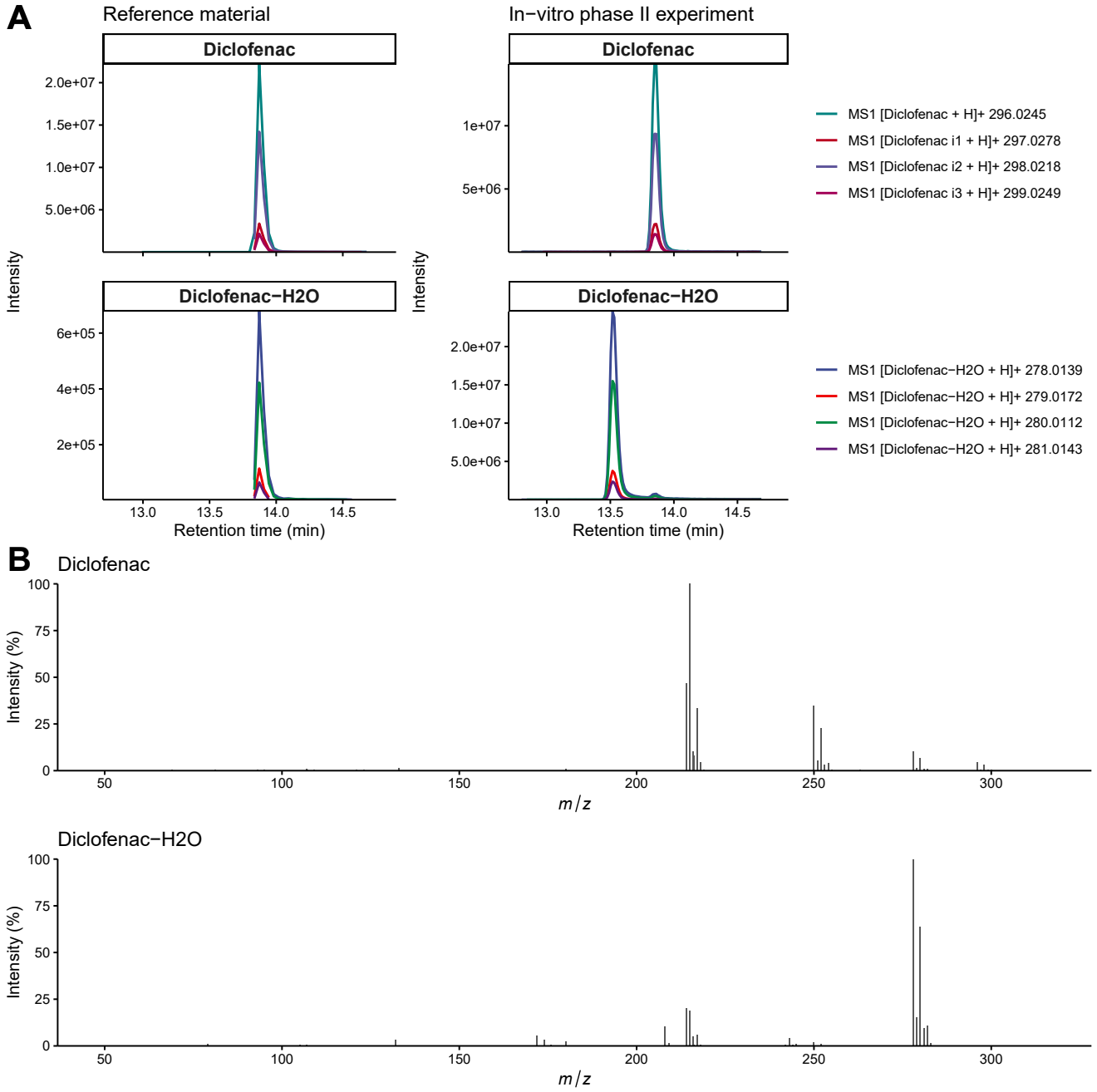

Figure S4: A. Extracted ion chromatograms of diclofenac and diclofenac-H_2O in reference material (left) and after *in-vitro* phase II experiment. Reference material displays a single diclofenac-H_2O neutral loss whereas *in-vitro* metabolism experiment displays a second diclofenac-H_2O peak (RT = 13.5), potentially being 1-(2,6-diclorophenyl) indolin-2-one. B. DIA-MS/MS spectra of diclofenac and diclofenac-H_2O (RT = 13.5) extracted from the *in-vitro* phase II experiment dataset.

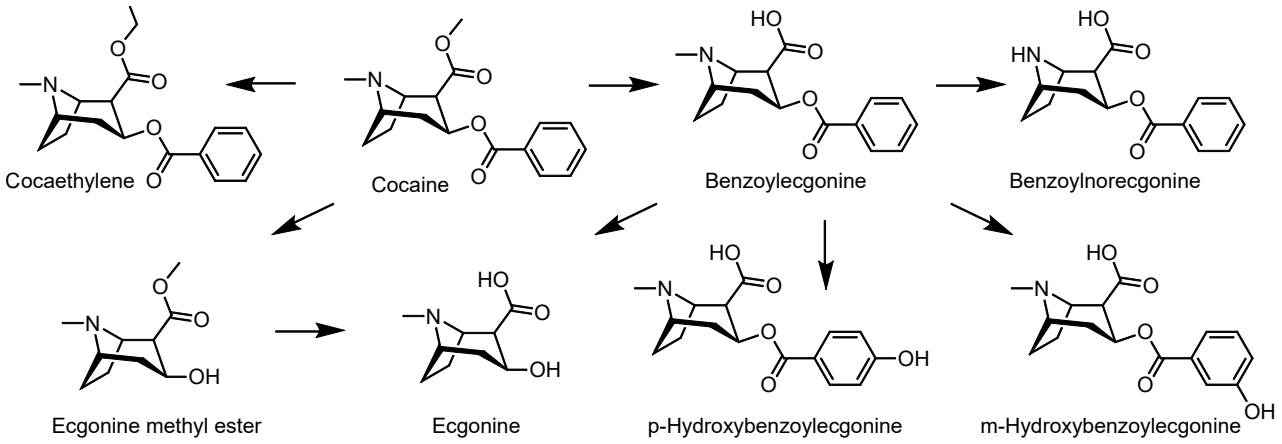

Figure S5: Structures of cocaine and its metabolites adapted from Huestis *et al*., 2007.