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Supplemental Material

Transfer and Metabolism of the Xenoestrogen Zearalenone in Human Perfused Placenta

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Table S1 calculated recoveries ± standard deviation [%] in the three investigated matrices obtained from spiking experiments

	placental tissue	fetal plasma	perfusion medium
α-ZAL	95 ± 8	98 ± 7	91 ± 15
α-ZEL	84 ± 12	91 ± 3	94 ± 10
α-ZEL-14-GlcA	91 ± 5	96 ± 3	108 ± 7
β-ZAL	95 ± 6	95 ± 8	77 ± 26
β-ZEL	93 ± 11	99 ± 15	74 ± 22
β-ZEL-14-GlcA	97 ± 1	88 ± 11	112 ± 12
ZAN	84 ± 11	95 ± 2	87 ± 4
ZEN	88 ± 2	89 ± 11	100 ± 13
ZEN-14-GlcA	92 ± 10	82 ± 4	96 ± 12
ZEN-14-Sulf	89 ± 2	90 ± 1	97 ± 3

α-zearalanol (α-ZAL); α-zearalenol (α-ZEL); α-zearalenol-14-glucuronide (α-ZEL-14-GlcA); β-zearalanol (β-ZAL); β-zearalenol (β-ZEL); β-zearalenol-14-glucuronide (β-ZEL-14-GlcA); zearalanone (ZAN); zearalenone (ZEN); zearalenone-14-glucuronide (ZEN-14-GlcA); zearalenone-14-sulfate (ZEN-14-Sulf)

Table S2 Impurities of added ZEN (experiment 1-3)

	β-ZEL [%]	ZAN [%]
ZEN1	1.40	1.05
ZEN2	1.09	1.04
ZEN3	1.48	0.95
Mean ± SD	1.32 ± 0.2	1.01 ± 0.05

β-zearalenol (β-ZEL)**;** zearalanone (ZAN)

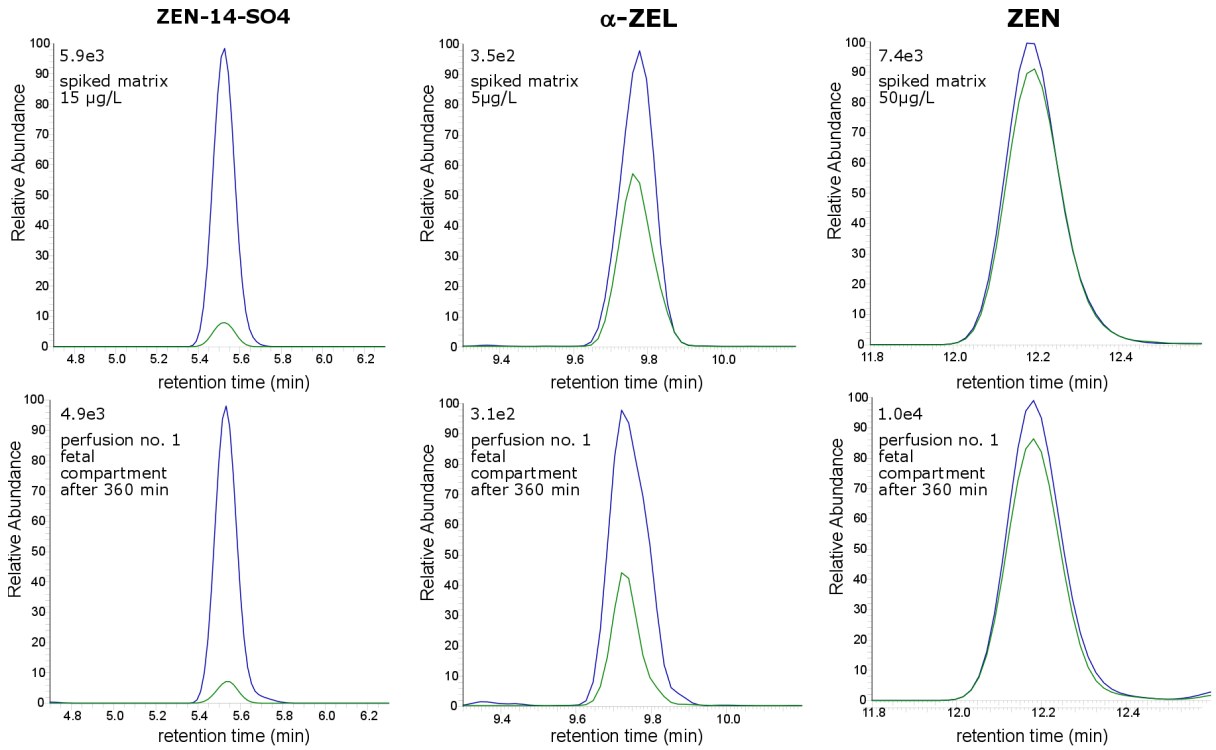

Figure S1: MRM (multiple reaction monitoring) chromatograms of reference standards spiked into blank medium and a fetal medium sample after 360 minutes; quantifier transitions in blue: zearalenone-14-sulfate (ZEN-14-Sulf) m/z 397.1 -> 317.2; α-zearalenol (α-ZEL) m/z 319.2 -> 275.2; zearalenone (ZEN) m/z 317 -> 175; qualifier transition in green: ZEN-14-Sulf m/z 397.1 -> 175.1; α-ZEL m/z 319.2 -> 160.1; ZEN m/z 317 -> 131

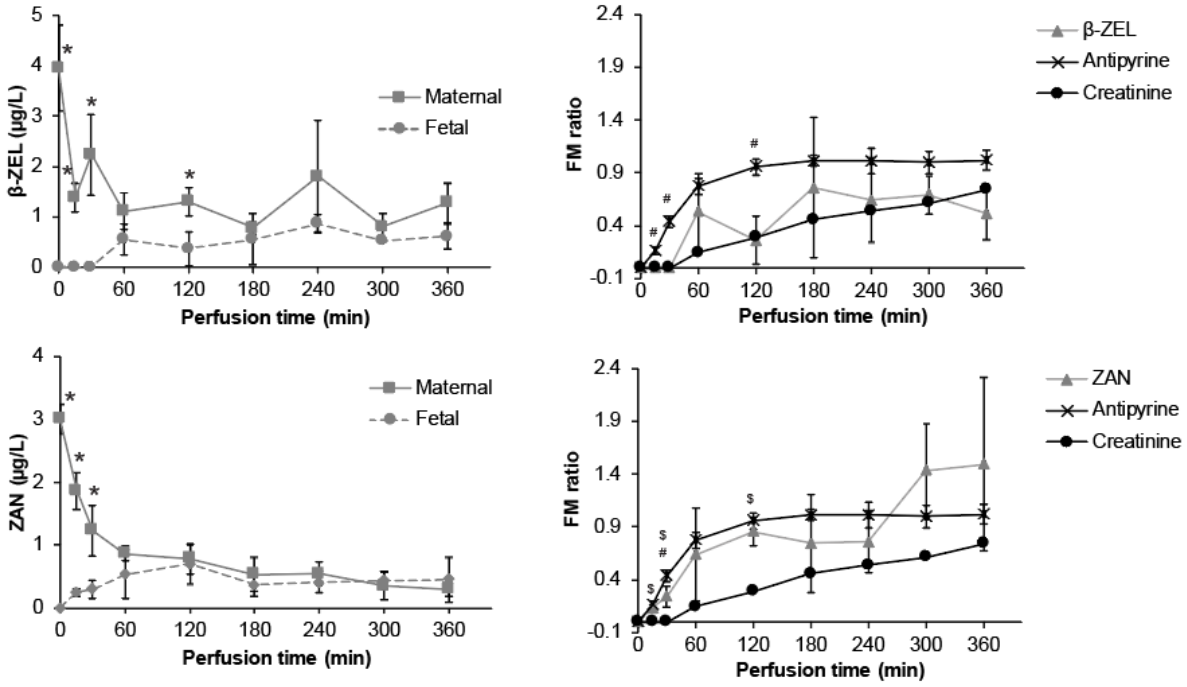

Figure S2: Perfusion profiles and fetal-maternal ratios (FM ratio) of β-zearalenol (β-ZEL) and zearalanone (ZAN). β-ZEL and ZAN, present as contaminants in ZEN (around 1%; 3 µg/L), were measured from the maternal and fetal perfusates by UPLC-MS/MS at several time points during 6 h of perfusion with 318 µg/L ZEN. FM ratios were calculated for each time point and FM ratios of antipyrine and creatinine were added for comparison. Data represent mean ± SD of three independent placentae perfused with medium containing ZEN. $p < 0.05$ is considered statistically significant (* denotes differences between maternal and fetal concentrations in β-ZEL or ZAN perfusions; # and $ denote differences in the FM ratio between metabolites and antipyrine or metabolites and creatinine, respectively). Perfusion data comparing maternal and fetal concentrations were analyzed by unpaired Student's t-test.