

**Table S1.** List of analytes with MRM <sup>1</sup> transitions and parameters.

Analyte	Q1 <sup>2</sup> (m·z <sup>-1</sup> )	Q3 <sup>3</sup> (m·z <sup>-1</sup> )	RT <sup>4</sup> (min)
CBZ-1 <sup>5</sup>	237.06	194	2.12
CBZ-2 <sup>6</sup>	237.06	165	2.12
CBZ-epoxide-1	253.045	179.9	1.43
CBZ-epoxide-2	253.045	236.1	1.43
<i>trans</i> -CBZ diol-1	271.04	210	1.31
<i>trans</i> -CBZ diol-2	271.04	180.1	1.31
<sup>13</sup> C <sub>6</sub> -CBZ-ISTD <sup>7</sup>	243.098	200	2.11
CBZ-epoxide-d <sub>10</sub> -ISTD <sup>8</sup>	263.099	246.1	1.41

<sup>1</sup> MRM, Multiple Reaction Monitoring; <sup>2</sup> Q1, M + H<sup>+</sup>; <sup>3</sup> Q3, fragment ion; <sup>4</sup> RT, retention time (min);

<sup>5</sup> CBZ-1, carbamazepine-1 quantifier ion; <sup>6</sup> CBZ-2, carbamazepine-2 quantifier ion; <sup>7</sup> <sup>13</sup>C<sub>6</sub>-CBZ-ISTD, <sup>13</sup>C<sub>6</sub>-CBZ internal standards; <sup>8</sup> CBZ-epoxide-d<sub>10</sub>-ISTD, CBZ-epoxide-d<sub>10</sub> internal standards.

**Table S2.** Ion source parameters—Electrospray ionization conducted in positive mode.

Parameter	Setting
Curtain Gas	35 psi
Collision Gas	Medium
IonSpray Voltage	5500 V
Temperature	550 °C
Ion Source Gas 1	40 psi
Ion Source Gas 2	50 psi

**Table S3.** Limit of quantification (LOQ) results based on the extraction method validation.

Analysed Group	Sampling Weight/Volume	CBZ <sup>1</sup>	CBZ-E <sup>2</sup>	CBZ-diol <sup>3</sup>
Urine	0.10 mL	1 <sup>4</sup>	0.5	0.5
Feces	0.10 g	10	0.5	0.5
Content of Caecum	0.10 g	1	0.5	10
Serum/Plasma	0.10 mL	10	0.5	n.v. <sup>5</sup>
Liver	0.10 g	0.5	0.5	1
Kidney	1.00 g	25	1	1
Meat of loin	1.00 g	0.5	0.5	1
Meat of thigh	0.10 g	0.5	0.5	10
Spleen	0.10 g	1	1	n.v.

<sup>1</sup> CBZ, carbamazepine; <sup>2</sup> CBZ-E, CBZ-10,11-epoxide; <sup>3</sup> CBZ-diol, *trans*-10,11-dihydro-10,11-dihydroxy-CBZ; <sup>4</sup> Limit of quantification at ng·g<sup>-1</sup> (ppb); <sup>5</sup> n.v., not validated.