

# USB Powered Coated Blade Spray Ion Source for on-site testing using transportable Mass Spectrometry

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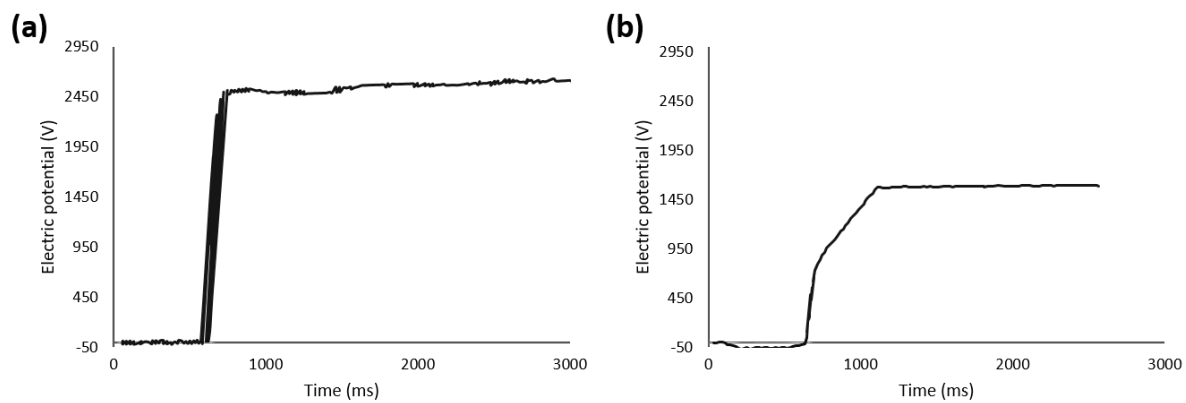
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**Table S1:** Instrument settings for cone voltage, collision energy, and adapted MS/MS ions of sulfonamide antibiotics and their corresponding internal standard.

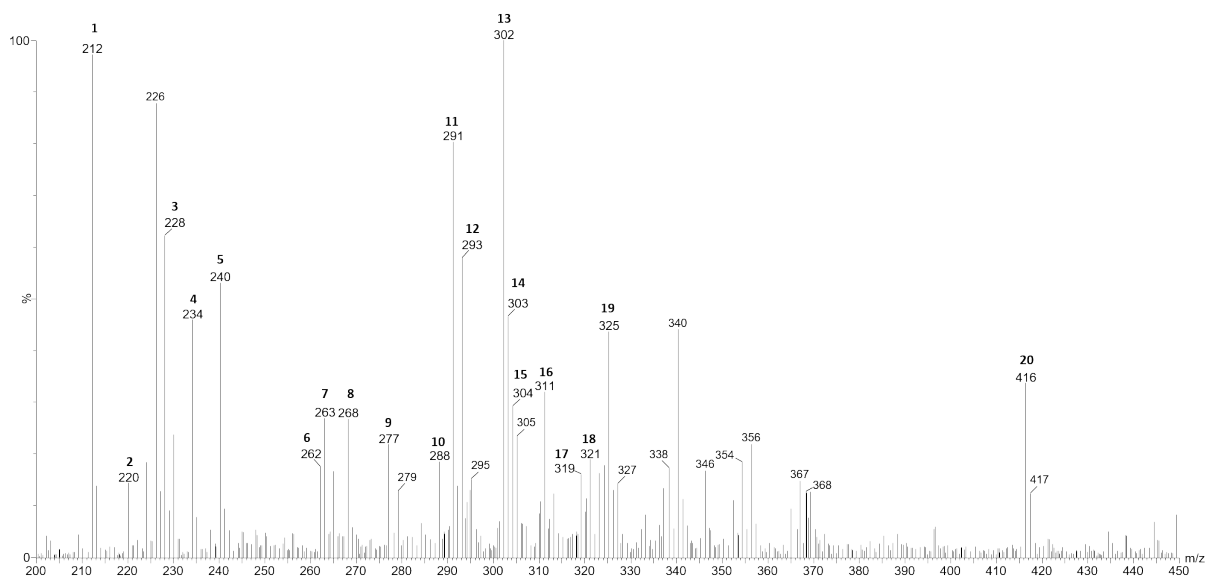
Component	Corresponding internal standard	Precursor ion mass ( $m/z$ )	Product ion mass ( $m/z$ )	Cone voltage (V)	Coll. Energy (eV)
Sulfacetamide		215.2	156.1	35	15
			92.2	35	18
Sulfadiazine	Sulfadiazine-d <sub>4</sub>	251.2	156.1	24	15
			92.2	24	25
Sulfadiazine-d <sub>4</sub>		255.2	96.2	24	25
Sulfathiazole	Sulfathiazole- <sup>13</sup> C <sub>6</sub>	256.2	156.1	26	15
			92.2	26	25
Sulfathiazole- <sup>13</sup> C <sub>6</sub>		262.2	162.1	26	15
Sulfapyridine	Sulfapyridine- <sup>13</sup> C <sub>6</sub>	250.2	156.1	26	30
			92.2	26	15
Sulfapyridine- <sup>13</sup> C <sub>6</sub>		256.2	98.2	26	30
Sulfamerazine	Sulfamerazine- <sup>13</sup> C <sub>6</sub>	265.2	156.1	28	30
			92.2	28	15
Sulfamerazine- <sup>13</sup> C <sub>6</sub>		271.2	98.2	28	30
Sulfamoxole		268.2	156.1	23	15
			92.2	23	25
Sulfadimidine	Sulfadimidine- <sup>13</sup> C <sub>6</sub>	279.2	186.2	28	15
			92.2	28	30
Sulfadimidine- <sup>13</sup> C <sub>6</sub>		285.2	186.2	28	15
Sulfamethizole	Sulfamethizole- <sup>13</sup> C <sub>6</sub>	271.1	156.1	24	15
			92.2	24	30
Sulfamethizole- <sup>13</sup> C <sub>6</sub>		277.1	162.1	24	15
Sulfamethoxypyridazine	Sulfamethoxypyridazine- <sup>13</sup> C <sub>6</sub>	281.2	156.1	25	15
			92.2	25	30
Sulfamethoxypyridazine- <sup>13</sup> C <sub>6</sub>		284.2	156.1	25	15
Sulfachloropyridazine	Sulfachloropyridazine- <sup>13</sup> C <sub>6</sub>	285.2	156.1	23	15
			92.2	23	30
Sulfachloropyridazine- <sup>13</sup> C <sub>6</sub>		291.2	162.1	23	15
Sulfamonomethoxine		281.2	156.1	30	20
			92.2	30	30
Sulfamethoxazole	Sulfamethoxazole-d <sub>4</sub>	254.2	156.1	22	15
			92.2	22	25
Sulfamethoxazole-d <sub>4</sub>		258.2	96.2	22	25

Sulfadoxine	Sulfadoxine-d <sub>3</sub>	311.2	156.1	24	20
			92.2	24	30
Sulfadoxine-d <sub>3</sub>		314.2	159.1	24	20
Sulfisoxazole	Sulfisoxazole- <sup>13</sup> C <sub>6</sub>	268.2	156.1	21	15
			92.2	21	30
Sulfisoxazole- <sup>13</sup> C <sub>6</sub>		274.2	162.2	21	15
Sulfaphenazole		315.2	156.1	35	19
			92.2	35	26
Sulfadimethoxine	Sulfadimethoxine-d <sub>4</sub>	311.2	156.1	28	20
			92.2	28	35
Sulfadimethoxine-d <sub>4</sub>		317.2	156.1	28	20
Sulfaquinoxaline	Sulfaquinoxaline- <sup>13</sup> C <sub>6</sub>	301.2	156.1	30	15
			92.2	30	30
Sulfaquinoxaline- <sup>13</sup> C <sub>6</sub>		307.2	162.1	30	15

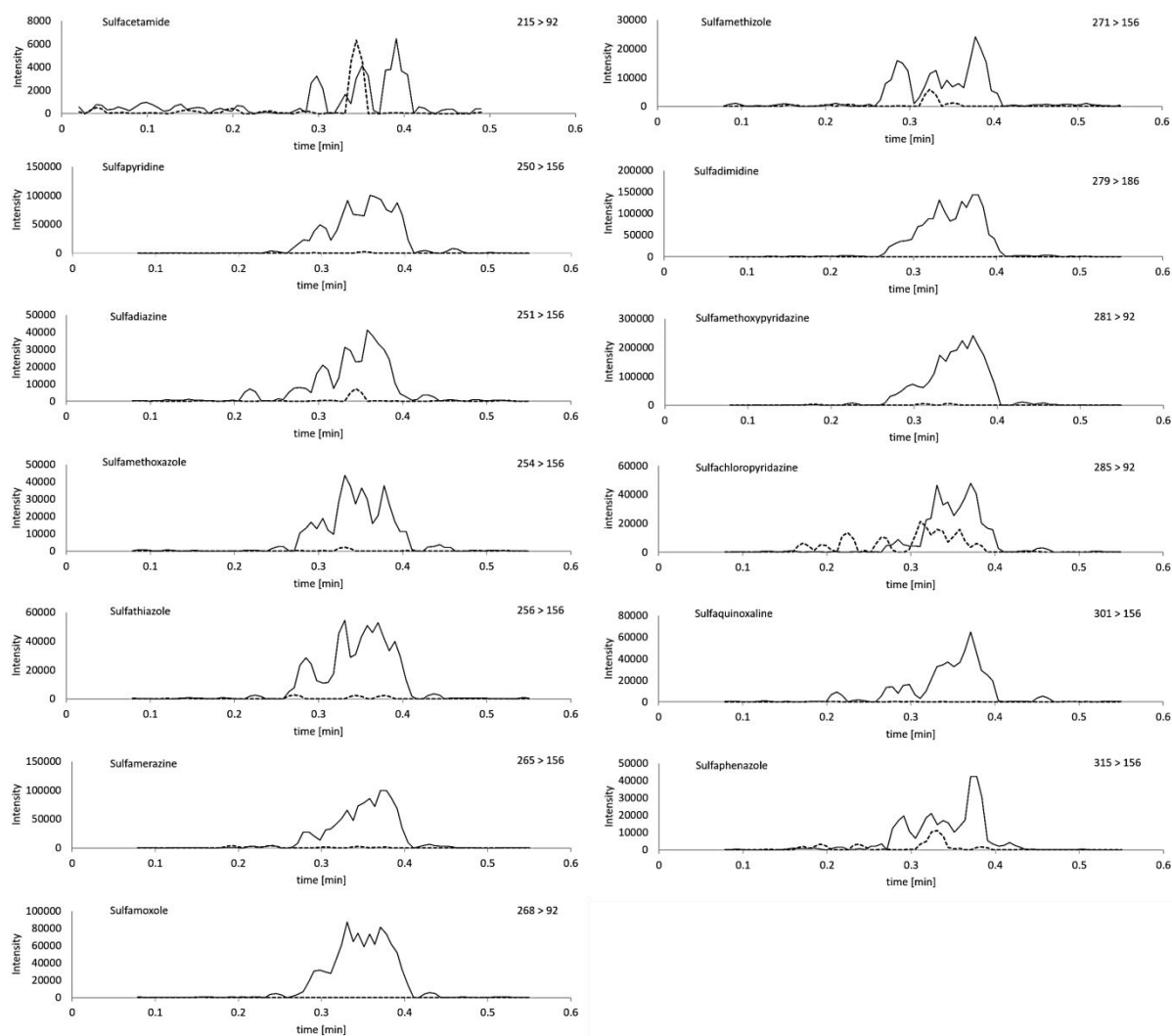
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**Figure S1.** Oscilloscopic derived electric potential build-up curve. (a) The associated build-up curve of the created USB-HV device. (b) The oscilloscopic determined build-up curve of MS-source HV.



**Figure S2.** Full scan mass spectrum showing the precursor ions ( $m/z$ ) of 22  $\beta$ -agonists at different concentrations (1) 2000  $\mu\text{g/L}$  of metaproterenol, (2) 100  $\mu\text{g/L}$  cimaterol, (3) 40  $\mu\text{g/L}$  tulobuterol, (4) 100  $\mu\text{g/L}$  cimbuterol, (5) 200  $\mu\text{g/L}$  salbutamol, (6) 200  $\mu\text{g/L}$  zilpaterol, (7) 100  $\mu\text{g/L}$  clenproperol, (8) 200  $\mu\text{g/L}$  carbuterol, (9) 40  $\mu\text{g/L}$  clenbuterol, (10) 100  $\mu\text{g/L}$  ritodrine, (11) 100  $\mu\text{g/L}$  clenpenterol and 200  $\mu\text{g/L}$  procatamol, (12) 40  $\mu\text{g/L}$  hydroxymethylclenbuterol, (13) 100  $\mu\text{g/L}$  isoxsurpine and 200  $\mu\text{g/L}$  ractopamine, (14) 200  $\mu\text{g/L}$  clenhexyl, (15) 200  $\mu\text{g/L}$  fenoterol, (16) 40  $\mu\text{g/L}$  mabuterol, (17) 200  $\mu\text{g/L}$  clenclorhexerol, (18) 40  $\mu\text{g/L}$  chlorbrombuterol, (19) 40  $\mu\text{g/L}$  mapenterol, and (20) 200  $\mu\text{g/L}$  salmeterol.



**Figure S3.** MRM chromatograms of the most intense fragment of 13 sulfonamide antibiotics in bovine milk. The solid lines represent chromatograms of bovine milk spiked at MRL (100  $\mu\text{g}/\text{kg}$ ) and the dotted lines represent chromatograms of blank bovine milk.