

Urban Brown Rats (*Rattus norvegicus*) as Possible Source of Multidrug-Resistant *Enterobacteriaceae* and Methicillin-Resistant *Staphylococcus* spp., Vienna, Austria, 2016/17

Supplementary Materials

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Supplementary Figure S1. Spatial distribution of the captured brown rats (*Rattus norvegicus*) and antimicrobial resistant isolates in Karlsplatz (S1A) and Danube Canal (S1B), September 13, 2016 - June 6, 2017, Vienna, Austria

Maps were built using QGIS 3.4.5 (QGIS Development Team, 2018). Basemaps: Orthofoto 2016 Wien (Open Data Österreich, <https://www.data.gv.at/>)

Figure S1A. Karlsplatz, Vienna, Austria

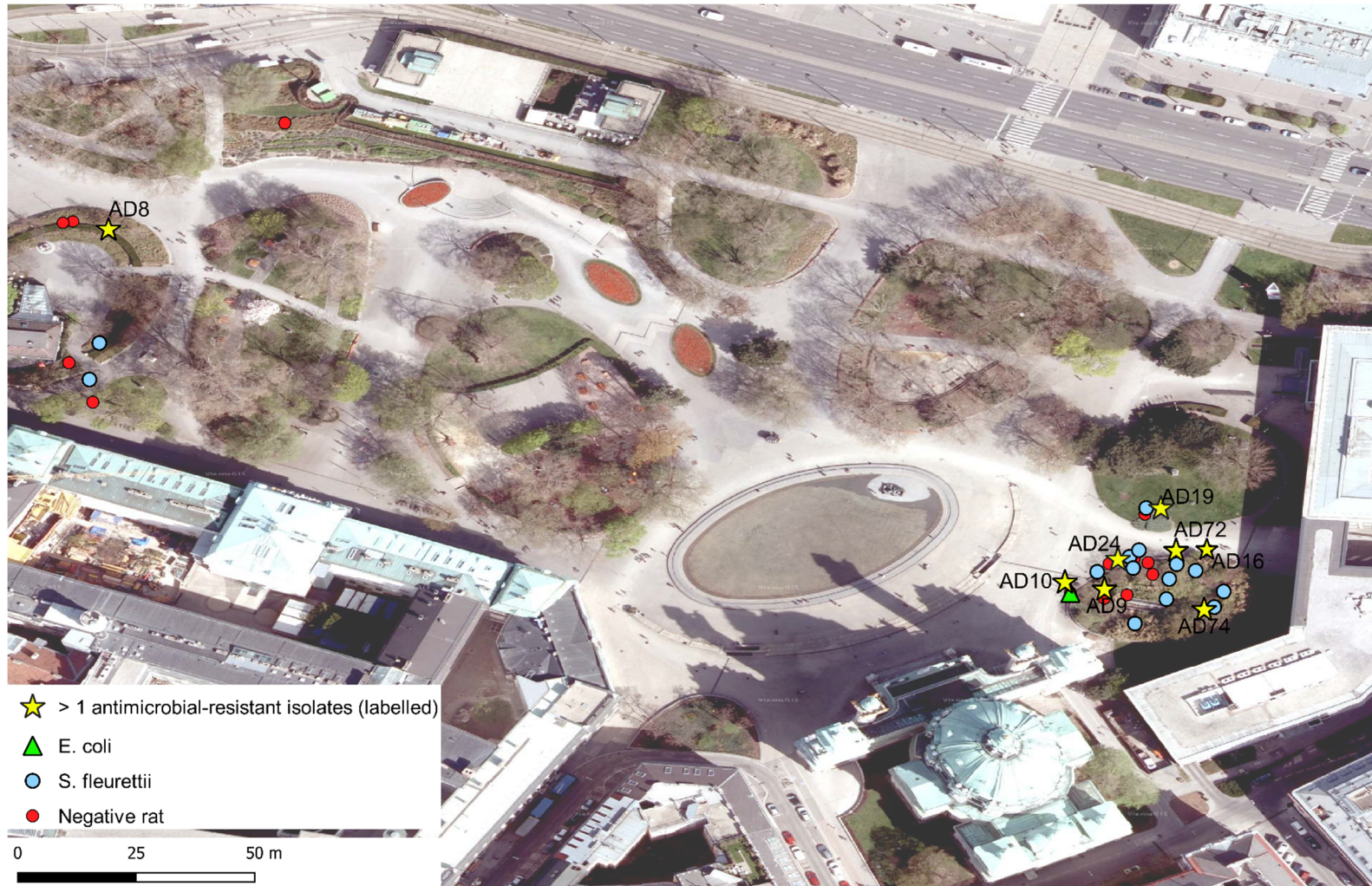


Figure S1B. Danube Canal, Vienna, Austria



Supplementary Table S1. Summary characteristics of the brown rats (*Rattus norvegicus*) captured, September 13, 2016 - June 6, 2017, Vienna, Austria

| Rat ID | Place | Date of capture | Latitude (D.D.) | Longitude (D.D.) | Elevation (m) | Sex | Body mass (g) | Length nose-anus (mm) | Length anus-tip tail (mm) | <i>Enterobacteriaceae</i> isolates (no.) | <i>Staphylococcus</i> spp. isolates (no.) |
|--------|------------|-----------------|-----------------|------------------|---------------|--------|---------------|-----------------------|---------------------------|--|---|
| AD1 | Karlsplatz | 2016 Sep 13 | 48.19928 | 16.36938 | 135.7 | male | 264.9 | 229 | 174 | | |
| AD2 | Karlsplatz | 2016 Sep 13 | 48.20008 | 16.36992 | 188.5 | male | 185.3 | 191 | 163 | | |
| AD3 | Karlsplatz | 2016 Sep 13 | 48.1998 | 16.36932 | 174.4 | female | 65.7 | 138 | 128 | | |
| AD4 | Karlsplatz | 2016 Sep 13 | 48.19979 | 16.36929 | 173.9 | female | 65.3 | 143 | 125 | | |
| AD5 | Karlsplatz | 2016 Sep 20 | 48.19939 | 16.36931 | 166.4 | male | 269.7 | 232 | 194 | | |
| AD6 | Karlsplatz | 2016 Sep 20 | 48.19945 | 16.36939 | 166.7 | male | 276.5 | 223 | 186 | | <i>S. fleurettii</i> |
| AD7 | Karlsplatz | 2016 Sep 20 | 48.19935 | 16.36937 | 166.4 | male | 353.2 | 239 | 210 | | <i>S. fleurettii</i> |
| AD8 | Karlsplatz | 2016 Sep 20 | 48.19971 | 16.36931 | 168.8 | female | 334.3 | 238 | 221 | <i>E. coli</i> | <i>S. fleurettii</i> |
| AD9 | Karlsplatz | 2016 Sep 27 | 48.1988 | 16.37246 | 181.3 | female | 209.8 | 214 | 183 | | <i>S. fleurettii</i> , MRSP |
| AD10 | Karlsplatz | 2016 Sep 27 | 48.19879 | 16.3723 | 180.4 | female | 352.1 | 239 | 250 | <i>E. coli</i> (2) | <i>S. fleurettii</i> , <i>S. xylosus</i> |
| AD11 | Karlsplatz | 2016 Sep 27 | 48.19878 | 16.37243 | 179.9 | female | 76.6 | 143 | 130 | | <i>S. fleurettii</i> |
| AD12 | Karlsplatz | 2016 Sep 27 | 48.19879 | 16.37238 | 179.2 | female | 204.3 | 208 | 172 | | |
| AD13 | Karlsplatz | 2016 Sep 27 | 48.19884 | 16.37232 | 179.7 | female | 102.5 | 155 | 148 | | <i>S. fleurettii</i> |
| AD14 | Karlsplatz | 2016 Oct 11 | 48.19891 | 16.37234 | 132.5 | female | 42.1 | 119 | 111 | | |
| AD15 | Karlsplatz | 2016 Oct 11 | 48.19893 | 16.37233 | 131.8 | female | 38.3 | 107 | 91 | | <i>S. fleurettii</i> |
| AD16 | Karlsplatz | 2016 Oct 11 | 48.19894 | 16.37259 | 115.7 | male | 118.8 | 180.1 | 160 | | <i>S. fleurettii</i> (2) |
| AD17 | Karlsplatz | 2016 Oct 11 | 48.19886 | 16.3724 | 126.3 | male | 274.1 | 221 | 205 | | <i>S. fleurettii</i> |
| AD18 | Karlsplatz | 2016 Oct 11 | 48.19883 | 16.37233 | 128.0 | female | 238.9 | 206 | 186 | | |
| AD19 | Karlsplatz | 2016 Oct 11 | 48.19893 | 16.37237 | 133.7 | male | 46.6 | 121 | 111 | <i>E. coli</i> | <i>S. sciuri</i> |
| AD20 | Karlsplatz | 2016 Oct 11 | 48.19875 | 16.37247 | 129.4 | female | 47.0 | 155 | 102 | | |
| AD21 | Karlsplatz | 2016 Oct 11 | 48.19877 | 16.37228 | 122.0 | male | 375.8 | 251 | 213 | <i>E. coli</i> | |
| AD22 | Karlsplatz | 2016 Oct 11 | 48.19882 | 16.37226 | 121.0 | male | 242.2 | 288 | 187 | | |
| AD23 | Karlsplatz | 2016 Oct 11 | 48.19882 | 16.37245 | 123.9 | male | 351.0 | 242 | 204 | | <i>S. fleurettii</i> |
| AD24 | Karlsplatz | 2016 Oct 11 | 48.19877 | 16.37237 | 116.0 | male | 424.7 | 262 | 218 | <i>E. coli</i> | <i>S. fleurettii</i> |

| | | | | | | | | | | |
|------|--------------|-------------|----------|----------|-------|--------|-------|-----|-----|--|
| AD25 | Karlsplatz | 2016 Oct 11 | 48.19879 | 16.37235 | 114.3 | female | 305.0 | 216 | 196 | <i>S. fleurettii</i> |
| AD26 | Karlsplatz | 2016 Oct 18 | 48.19874 | 16.37227 | 114.0 | female | 33.9 | 111 | 99 | |
| AD27 | Karlsplatz | 2016 Oct 18 | 48.19879 | 16.37241 | 111.9 | male | 40.9 | 102 | 95 | <i>S. fleurettii</i> |
| AD28 | Karlsplatz | 2016 Oct 18 | 48.19881 | 16.37233 | 112.6 | female | 28.5 | 99 | 91 | <i>S. fleurettii</i> |
| AD29 | Karlsplatz | 2016 Oct 18 | 48.19873 | 16.37231 | 89.0 | female | 30.1 | 100 | 100 | |
| AD30 | Karlsplatz | 2016 Oct 18 | 48.19885 | 16.3723 | 77.8 | male | 32.1 | 105 | 102 | <i>S. fleurettii</i> |
| AD31 | Danube Canal | 2017 Mar 6 | 48.22627 | 16.36576 | 168.6 | male | 381.5 | 249 | 194 | <i>S. fleurettii</i> |
| AD32 | Danube Canal | 2017 Mar 6 | 48.22681 | 16.36497 | 177.2 | female | 408.9 | 240 | 195 | <i>E. coli</i> <i>S. fleurettii</i> |
| AD33 | Danube Canal | 2017 Mar 6 | 48.22681 | 16.36497 | 177.2 | male | 277.9 | 224 | 178 | <i>S. fleurettii</i> |
| AD34 | Danube Canal | 2017 Mar 7 | 48.22673 | 16.36497 | 168.4 | female | 153.5 | 188 | 165 | <i>S. fleurettii</i> |
| AD35 | Danube Canal | 2017 Mar 7 | 48.22629 | 16.36569 | 166.9 | male | 100.5 | 152 | 125 | <i>S. fleurettii</i> |
| AD36 | Danube Canal | 2017 Mar 7 | 48.22673 | 16.36497 | 167.4 | male | 162.4 | 188 | 163 | <i>S. fleurettii</i> |
| AD37 | Danube Canal | 2017 Mar 7 | 48.2268 | 16.36506 | 177.2 | female | 209.7 | 194 | 172 | <i>S. fleurettii</i> (2) |
| AD38 | Danube Canal | 2017 Mar 7 | 48.22265 | 16.36738 | 167.6 | male | 211.8 | 214 | 184 | <i>S. fleurettii</i> |
| AD39 | Danube Canal | 2017 Mar 7 | 48.22414 | 16.36715 | 169.1 | female | 211.4 | 190 | 190 | <i>S. fleurettii</i> |
| AD50 | Danube Canal | 2017 Mar 21 | 48.22627 | 16.36582 | 153.0 | female | 152.9 | 180 | 155 | <i>S. sciuri</i> |
| AD51 | Danube Canal | 2017 Mar 28 | 48.22632 | 16.36561 | 162.8 | male | 44.8 | 113 | 100 | |
| AD52 | Danube Canal | 2017 Mar 28 | 48.2263 | 16.36571 | 163.3 | male | 45.8 | 122 | 115 | <i>S. fleurettii</i> |
| AD53 | Danube Canal | 2017 Mar 28 | 48.22661 | 16.36519 | 159.0 | female | 319.4 | 206 | 226 | |
| AD54 | Danube Canal | 2017 Mar 28 | 48.22669 | 16.36506 | 158.5 | male | 392.3 | 237 | 157 | <i>E. xiangfangensis</i> |
| AD59 | Karlsplatz | 2017 Apr 11 | 48.19875 | 16.37244 | 159.2 | female | 134.2 | 169 | 149 | <i>S. fleurettii</i> |
| AD60 | Danube Canal | 2017 Apr 12 | 48.22587 | 16.36624 | 174.6 | female | 73.1 | 132 | 129 | |
| AD61 | Danube Canal | 2017 Apr 12 | 48.22644 | 16.36549 | 184.2 | female | 49.0 | 123 | 113 | <i>S. fleurettii</i> |
| AD62 | Danube Canal | 2017 Apr 12 | 48.22575 | 16.36629 | 174.3 | male | 80.0 | 142 | 137 | |
| AD63 | Danube Canal | 2017 Apr 12 | 48.22572 | 16.36647 | 175.1 | female | 70.7 | 138 | 128 | |
| AD64 | Danube Canal | 2017 Apr 12 | 48.22601 | 16.36661 | 175.4 | female | 303.2 | 219 | 172 | |
| AD65 | Danube Canal | 2017 May 2 | 48.22717 | 16.36451 | 186.0 | male | 64.1 | 138 | 131 | |
| AD66 | Danube Canal | 2017 May 2 | 48.22717 | 16.36461 | 184.9 | male | 61.5 | 130 | 116 | |
| AD67 | Danube Canal | 2017 May 2 | 48.22558 | 16.36659 | 180.9 | male | 94.2 | 158 | 151 | |
| AD68 | Danube Canal | 2017 May 2 | 48.22596 | 16.36605 | 179.1 | male | 296.5 | 223 | 200 | MRSE |

| | | | | | | | | | | | |
|------|--------------|-------------|----------|----------|-------|--------|-------|-----|-----|--------------------------|-----------------------------|
| AD69 | Danube Canal | 2017 May 2 | 48.22646 | 16.36546 | 183.6 | female | 121.8 | 153 | 148 | | <i>S. fleurettii</i> (2) |
| AD70 | Danube Canal | 2017 May 2 | 48.22637 | 16.36555 | 183.0 | male | 120.4 | 157 | 142 | | <i>S. fleurettii</i> , MRSA |
| AD71 | Karlsplatz | 2017 May 3 | 48.19881 | 16.37248 | 194.0 | male | 210.9 | 214 | 176 | | <i>S. fleurettii</i> |
| AD72 | Karlsplatz | 2017 May 3 | 48.19876 | 16.37251 | 191.0 | male | 90.3 | 160 | 136 | <i>E. xiangfangensis</i> | <i>S. fleurettii</i> |
| AD73 | Danube Canal | 2017 May 23 | 48.22719 | 16.36445 | 187.7 | male | 283.7 | 225 | 180 | | |
| AD74 | Karlsplatz | 2017 Jun 6 | 48.19872 | 16.37246 | 175.8 | female | 55.6 | 132 | 126 | <i>E. coli</i> | <i>S. fleurettii</i> , MRSH |
| AD75 | Karlsplatz | 2017 Jun 6 | 48.19872 | 16.37246 | 175.8 | male | 201.7 | 202 | 181 | | |
| AD76 | Karlsplatz | 2017 Jun 6 | 48.19871 | 16.37235 | 176.1 | male | 292.7 | 228 | 191 | | <i>S. fleurettii</i> |
