Table 1. Mechanism of resistance for characterized *tet* and *otr* genes. Modified **Feb. 1, 2024**

Originally modified from MMBR 2001. 65; 232-260 with permission from ASM Journals [n=**64** genes + 11 mosaic genes]

| Efflux (**37**) | Ribosomal Protection (13) | Enzymatic (13) | Unknown[a] |
|---|---|---|---|
| *tet*(A), *tet*(B), *tet*(C), *tet*(D), *tet*(E), *tet*(59)[i] | *tet*(M), *tet*(O), *tet*(S), *tet*(W), *tet*(32), | *tet*(X)[c,q] | *tet*(U) |
| *tet*(G), *tet*(H), *tet*(J), *tet*(V), *tet*(Y) | *tet*(Q), *tet*(T), *tet*(36), *tet*(61)[n] | *tet*(37)[c] | |
| *tet*(Z), ***tet*(65)**[t]**,**tet(30), *tet*(31), *tet*(33), *tet*(57)[g] | *otr*(A), *tetB*(P)[b], *tet* | *tet*(34) | |
| *tet*(35)[d] | *tet*(44) | *tet*(47)[j], *tet*(48)[j], *tet*(49)[j], *tet*(50)[j] | |
| *tet*(39), *tet*(41) | | *tet*(51)[j],*tet*(52)[j], *tet*(53)[j], *tet*(54)[j] | |
| *tet*(K), *tet*( L), *tet*(38), *tet*(45)[e], *tet*(58)[h], *tet*(63)[o] | | *tet*(55)[j], *tet*(56)[j] | |
| *tetA*(P), *tet*(40) | | | |
| *otr*(B), *otr*(C) | | | |
| *tcr3* | | | |
| *tet*(42) | Mosiac Ribosomal Protection (11) | | |
| *tet*(43) | *tet*(O/32/O), *tet*(O/W/32/O), *tet*(O/32/O | | |
| *tet*AB(46)[f] | *tet*(O/W/32/O/W/O), *tet*(W/32/O), *tet*(O/W) | | |
| *tet*AB(60)[k] | *tet*(W/32/O/W/O), *tet*(O/W/O), *tet*(O/W/32/O)[o] | | |
| *tet*(62)[p] | *tet*(S/M), *tet*(W/N/W) | | |
| *tet*(64)[s] | | | |

**blue new information**

[a]*tet* (U) has been sequenced but does not appear to be related to either efflux or ribosomal protection proteins

[b]*tetB*(P) is not found alone and *tetA*(P) and *tetB*(P) are counted as one operon;

[c]*tet*(X) and *tet*(37) are unrelated but both are NADP-requiring oxidoreductases: *tet*(34) similar to the xanthine-guanine phosphoribosyl transferase genes of *V. cholerae*; [d] Not related to other *tet* efflux genes; *tet*(40) & *tet*(41) App En Micro 2007; 73:2199; *tet*(42) AAC 52:4518; *tet*(43) from metagenomic**;** *tet*(44) AAC press 2010**;** [e]You et al, JAC 2013 68:1962; [f] representing 2 different genes Warburton et al., JAC 2013 68:17 [two genes needed for resistance *tet*AB(46)**];** [g] Dr. Huang et al., 2015, J Food Protect 8:1428, **originally listed as *tet*(47);**

[h] Dr. Kyselkova originally listed as *tet*(48); [j] Forsberg et al., 2015 Chemistry & Biology 22:888;

[k] Roberts et al. representing 2 different genes both needed for resistance;

[l] Patterson et al., 51:1115 AAC 2007; [n]*tet*(61) on same plasmid as *tet*(58) not released;

[o] Zhu, Wang Schwarz et al. JAC 2021 76:576-581 doi:10.1093/jac/dkaa485;

[p] McGivern, McDonell, Morris et al., Plasmid 2021 https://doi.org.10. 1016/j.plasmid.2021.102563 waste water;

**[q] Some groups have used alleles for *tet*(X). We do not recommend this because many of the alleles are 85-100% aa identical and the same genes has previously been listed as *tet*(X) in GenBank. So there are the same genes with two different names which is confusing. We would recommend that everyone uses just *tet*(X) and Tet(X) in the future. Also there are many uncultured bacteria with the *tet*(X) gene, as well as anaerobic bacteria were the *tet*(X) does not function.**

[r] Zhang, Dong, Shen et al., Nature communications 2020 11:4648 https://doi.org/10.1038/s41467-020-18475-9;

[s] Somprasong, Hall, Webb et al., AAC 2021 65:e01767-20 https://doi.org/10.1128/AAC.01767-20;

**[t] Kitt, Brdard, Tresch, Perreten submitted**