

[illegible]

|        | <i>B. abortus</i> | <i>B. melensis</i> | <i>B. sub</i> | <i>B. ovis</i> | <i>B. canis</i> | <i>B. neotoma</i> | <i>B. cet</i> | <i>B. pinipedalis</i> | <i>B. microi</i> | <i>B. inopinau</i> | <i>Oribacterium</i> spp. | <i>Acetobacter</i> hcoffii | <i>Y. enterocolica</i> O:9 | <i>Brucella</i> unknown |
|--------|-------------------|--------------------|---------------|----------------|-----------------|-------------------|---------------|-----------------------|------------------|--------------------|--------------------------|----------------------------|----------------------------|-------------------------|
| DANA   | ++ (100%)         | ++ (100%)          | ++ (88.9%)    | ++ (100%)      | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| GNA    | ++ (100%)         | ++ (100%)          | ++ (88.9%)    | ++ (100%)      | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| LNA    | ++ (96.7%)        | ++ (100%)          | ++ (100%)     | ++ (100%)      | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (93.8%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| KNA    | ++ (76.7%)        | ++ (87.9%)         | ++ (50%)      | ++ (100%)      | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (87.5%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| GPNA   | - (100%)          | ++ (63.6%)         | ++ (61.1%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (93.8%)             | ++ (100%)        | ++ (100%)          | ++ (50%)                 | - (100%)                   | - (100%)                   | - (100%)                |
| AFPNA  | - (100%)          | ++ (93.9%)         | ++ (88.9%)    | - (100%)       | ++ (50%)        | - (100%)          | - (100%)      | - (100%)              | - (90%)          | ++ (100%)          | - (100%)                 | - (100%)                   | - (100%)                   | - (100%)                |
| ENAOH  | - (100%)          | - (100%)           | - (94.4%)     | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| PYRNA  | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| HP     | ++ (96.7%)        | ++ (100%)          | ++ (100%)     | ++ (100%)      | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| IL     | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | ++ (50%)                 | - (100%)                   | - (100%)                   | - (100%)                |
| K      | ++ (93.3%)        | ++ (100%)          | ++ (66.7%)    | ++ (100%)      | ++ (75%)        | - (100%)          | ++ (100%)     | ++ (87.5%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| RR     | ++ (66.7%)        | ++ (51.5%)         | ++ (77.8%)    | ++ (100%)      | ++ (75%)        | ++ (100%)         | ++ (100%)     | - (62.5%)             | ++ (50%)         | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| GG     | ++ (100%)         | ++ (100%)          | ++ (100%)     | ++ (100%)      | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| P      | ++ (100%)         | ++ (100%)          | ++ (100%)     | ++ (100%)      | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| AcGK   | - (96.7%)         | ++ (57.6%)         | ++ (100%)     | ++ (100%)      | ++ (75%)        | ++ (100%)         | - (100%)      | - (100%)              | - (90%)          | ++ (100%)          | ++ (100%)                | ++ (100%)                  | - (100%)                   | ++ (50%)                |
| AFPA   | ++ (96.7%)        | ++ (100%)          | ++ (100%)     | ++ (50%)       | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (56.3%)            | ++ (80%)         | ++ (100%)          | ++ (50%)                 | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| N      | ++ (90%)          | ++ (90.9%)         | ++ (61.1%)    | ++ (75%)       | ++ (75%)        | ++ (100%)         | ++ (100%)     | ++ (62.5%)            | - (100%)         | ++ (100%)          | - (100%)                 | ++ (100%)                  | - (100%)                   | ++ (100%)               |
| W      | ++ (86.7%)        | ++ (90.9%)         | ++ (77.8%)    | - (100%)       | - (100%)        | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (90%)         | ++ (100%)          | ++ (50%)                 | ++ (100%)                  | - (100%)                   | - (100%)                |
| EH     | ++ (90%)          | ++ (93.9%)         | ++ (55.6%)    | ++ (100%)      | ++ (75%)        | ++ (100%)         | ++ (100%)     | - (81.3%)             | ++ (90%)         | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| AcKA   | - (100%)          | ++ (60.6%)         | ++ (100%)     | ++ (75%)       | ++ (50%)        | ++ (100%)         | - (100%)      | - (100%)              | - (100%)         | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| dAdA   | ++ (100%)         | - (57.6%)          | ++ (83.3%)    | - (100%)       | ++ (50%)        | - (100%)          | ++ (100%)     | ++ (81.3%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| V      | - (100%)          | - (100%)           | - (61.1%)     | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (93.8%)             | - (100%)         | - (100%)           | - (100%)                 | ++ (100%)                  | - (100%)                   | - (100%)                |
| I      | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | - (100%)                 | ++ (100%)                  | - (100%)                   | - (100%)                |
| VT5    | - (96.7%)         | ++ (66.7%)         | ++ (55.6%)    | ++ (100%)      | ++ (50%)        | - (100%)          | - (100%)      | - (56.3%)             | ++ (50%)         | ++ (100%)          | ++ (100%)                | ++ (100%)                  | - (100%)                   | ++ (100%)               |
| DT     | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | - (100%)                 | ++ (100%)                  | - (100%)                   | - (100%)                |
| E      | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | - (100%)                 | ++ (100%)                  | ++ (100%)                  | - (100%)                |
| Pyr    | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | ++ (100%)                | - (100%)                   | ++ (100%)                  | - (100%)                |
| βA     | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| V4M    | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | - (100%)                 | - (100%)                   | - (100%)                   | - (100%)                |
| PepK   | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | - (100%)                 | - (100%)                   | - (100%)                   | - (100%)                |
| BISPH7 | - (80%)           | - (66.7%)          | ++ (66.7%)    | ++ (50%)       | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (56.3%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| PHOS7  | - (83.3%)         | ++ (100%)          | ++ (50%)      | - (75%)        | ++ (75%)        | - (100%)          | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| aGLU7  | - (100%)          | ++ (60.6%)         | ++ (61.1%)    | - (100%)       | ++ (100%)       | ++ (100%)         | - (100%)      | ++ (50%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| aMAL7  | - (100%)          | - (100%)           | - (83.3%)     | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| aGLU5  | - (100%)          | - (100%)           | ++ (83.3%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (56.3%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | - (100%)                |
| aXYL7  | - (100%)          | - (100%)           | ++ (94.4%)    | - (100%)       | ++ (50%)        | - (100%)          | - (100%)      | - (87.5%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| CHIT7  | - (96.7%)         | ++ (97%)           | ++ (88.9%)    | - (100%)       | ++ (50%)        | ++ (100%)         | - (100%)      | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| EROL   | ++ (100%)         | ++ (100%)          | ++ (77.8%)    | - (100%)       | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (50%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| L-FUC  | - (53.3%)         | ++ (100%)          | ++ (100%)     | - (100%)       | ++ (50%)        | - (100%)          | ++ (100%)     | - (75%)               | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| GLUCY  | ++ (100%)         | ++ (100%)          | ++ (100%)     | ++ (100%)      | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| D-RIB  | ++ (100%)         | - (87.9%)          | ++ (100%)     | - (100%)       | ++ (50%)        | - (100%)          | ++ (100%)     | - (100%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| D-ARA  | - (80%)           | ++ (60.6%)         | - (77.8%)     | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (100%)              | ++ (60%)         | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| D-GLU  | ++ (100%)         | ++ (93.9%)         | ++ (100%)     | - (100%)       | ++ (100%)       | ++ (100%)         | ++ (100%)     | - (62.5%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| L-ARA  | ++ (80%)          | ++ (93.9%)         | ++ (55.6%)    | ++ (50%)       | ++ (100%)       | ++ (100%)         | ++ (100%)     | - (87.5%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | - (100%)                |
| DOGAL  | - (100%)          | - (87.9%)          | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | - (100%)                 | - (100%)                   | - (100%)                   | - (100%)                |
| D-GAL  | ++ (100%)         | ++ (93.9%)         | ++ (55.6%)    | - (100%)       | ++ (50%)        | ++ (100%)         | ++ (100%)     | - (87.5%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| D-XYL  | ++ (66.7%)        | ++ (100%)          | ++ (55.6%)    | - (100%)       | ++ (50%)        | ++ (100%)         | ++ (100%)     | - (100%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| D-TAL  | ++ (66.7%)        | ++ (60.6%)         | ++ (66.7%)    | - (100%)       | ++ (50%)        | ++ (100%)         | ++ (100%)     | - (87.5%)             | ++ (100%)        | - (100%)           | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| D-TOL  | ++ (80%)          | - (100%)           | ++ (66.7%)    | ++ (50%)       | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (75%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| ADON   | ++ (93.3%)        | ++ (81.8%)         | ++ (55.6%)    | ++ (100%)      | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (75%)              | ++ (100%)        | - (100%)           | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| SUCR   | - (100%)          | - (100%)           | ++ (77.8%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | ++ (87.5%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | - (100%)                |
| MALTO  | - (100%)          | - (100%)           | ++ (77.8%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | ++ (62.5%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| D-FRU  | ++ (53.3%)        | ++ (100%)          | ++ (100%)     | - (100%)       | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (62.5%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| DNSOL  | - (100%)          | - (100%)           | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| LYXA   | - (100%)          | - (100%)           | ++ (88.9%)    | ++ (100%)      | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| PAL    | - (100%)          | - (100%)           | ++ (77.8%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | ++ (50%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| INOL   | - (60%)           | ++ (90.9%)         | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | - (100%)                |
| INON   | - (73.3%)         | - (100%)           | ++ (55.6%)    | - (100%)       | ++ (50%)        | - (100%)          | ++ (100%)     | ++ (87.5%)            | ++ (100%)        | - (100%)           | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| Galli  | ++ (100%)         | ++ (100%)          | ++ (100%)     | ++ (100%)      | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | ++ (100%)               |
| diLac  | ++ (100%)         | ++ (100%)          | ++ (100%)     | ++ (50%)       | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | - (100%)                   | ++ (100%)               |
| Acet   | - (80%)           | - (87.9%)          | ++ (88.9%)    | ++ (100%)      | ++ (100%)       | ++ (100%)         | - (100%)      | - (87.5%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | - (100%)                   | - (100%)                |
| L-Asn  | ++ (80%)          | ++ (100%)          | ++ (55.6%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (87.5%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | - (100%)                |
| L-Glu  | ++ (66.7%)        | ++ (100%)          | ++ (66.7%)    | ++ (50%)       | ++ (100%)       | ++ (100%)         | ++ (100%)     | ++ (87.5%)            | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| AlaGln | ++ (66.7%)        | ++ (60.7%)         | ++ (100%)     | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (100%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | ++ (100%)               |
| GuaSu  | - (73.3%)         | - (100%)           | - (55.6%)     | - (100%)       | ++ (100%)       | - (100%)          | ++ (100%)     | ++ (100%)             | ++ (100%)        | - (100%)           | - (100%)                 | - (100%)                   | - (100%)                   | - (100%)                |
| L-Cys  | ++ (100%)         | ++ (100%)          | ++ (100%)     | ++ (100%)      | ++ (50%)        | ++ (100%)         | ++ (100%)     | ++ (100%)             | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| D-Ala  | ++ (60%)          | ++ (87.9%)         | ++ (55.6%)    | - (100%)       | - (100%)        | ++ (100%)         | - (100%)      | - (100%)              | ++ (60%)         | ++ (100%)          | ++ (100%)                | ++ (100%)                  | - (100%)                   | - (100%)                |
| Progn  | - (66.7%)         | ++ (100%)          | ++ (88.9%)    | - (100%)       | ++ (100%)       | ++ (100%)         | - (100%)      | ++ (75%)              | - (100%)         | ++ (100%)          | ++ (100%)                | ++ (100%)                  | - (100%)                   | - (100%)                |
| L-Ala  | ++ (80%)          | ++ (100%)          | ++ (66.7%)    | - (100%)       | ++ (50%)        | - (100%)          | - (100%)      | - (100%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | ++ (100%)                  | ++ (100%)                  | - (100%)                |
| βHBut  | - (100%)          | - (100%)           | ++ (100%)     | - (100%)       | ++ (100%)       | ++ (100%)         | - (100%)      | - (100%)              | ++ (60%)         | ++ (100%)          | ++ (100%)                | ++ (100%)                  | - (100%)                   | - (100%)                |
| D-Asn  | - (73.3%)         | - (51.5%)          | - (100%)      | - (100%)       | - (100%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | - (100%)           | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| L-Arg  | - (93.3%)         | - (100%)           | ++ (66.7%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (100%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| AcArg  | - (100%)          | - (100%)           | ++ (66.7%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (100%)              | ++ (80%)         | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | ++ (100%)               |
| Glyx   | - (100%)          | - (93.9%)          | - (66.7%)     | - (100%)       | ++ (50%)        | - (100%)          | - (100%)      | - (100%)              | - (100%)         | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| L-Ser  | - (93.3%)         | ++ (87.9%)         | ++ (88.9%)    | ++ (100%)      | ++ (50%)        | - (100%)          | - (100%)      | - (100%)              | ++ (100%)        | ++ (100%)          | ++ (100%)                | - (100%)                   | ++ (100%)                  | - (100%)                |
| HipArg | - (100%)          | - (100%)           | ++ (55.6%)    | - (100%)       | ++ (100%)       | - (100%)          | - (100%)      | - (100%)              | ++ (80%)         | ++ (100%)          | ++ (100%)                | - (100%)                   | - (100%)                   | - (100%)                |
| L-Caro | - (60%)           | - (100%)           | ++ (77.8%)    | - (100%)       | - (100%)        | - (100%)          |               |                       |                  |                    |                          |                            |                            |                         |