**SupplementaryTable 2.** Pairwise ANI determined for members of the class *Archaeglobi* using MiSI algorithm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *A. neptunius* SE56T | *A. fulgidus*  VC-16T | *A. sulfaticallidus* PM70-1T | *A. profundus* AV18T | *A. veneficus* SNP6T | *G. ahangari* 234T | *G. acetivorans* SBH6T | *F. placidus* DSM 10642T |
| *A. neptunius* SE56T | 100 | 74 | 69 | 68 | 69 | 69 | 69 | 69 |
| *A. fulgidus* VC-16T | 74 | 100 | 70 | 69 | 70 | 71 | 70 | 70 |
| *A. sulfaticallidus* PM70-1T | 69 | 70 | 100 | 69 | 70 | 69 | 69 | 69 |
| *A. profundus* AV18T | 68 | 69 | 69 | 100 | 69 | 68 | 68 | 69 |
| *A. veneficus* SNP6T | 69 | 70 | 70 | 69 | 100 | 70 | 69 | 69 |
| *G. ahangari* 234T | 69 | 71 | 70 | 68 | 70 | 100 | 74 | 71 |
| *G. acetivorans* SBH6T | 69 | 70 | 69 | 68 | 69 | 74 | 100 | 70 |
| *F. placidus* DSM 10642T | 69 | 70 | 69 | 69 | 69 | 71 | 70 | 100 |

**Supplementary Table 3**. Alignment fraction (AF) values determined for members of the class *Archaeglobi*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *A. neptunius* SE56T | *A. fulgidus*  VC-16T | *A. sulfaticallidus* PM70-1T | *A. profundus* AV18T | *A. veneficus* SNP6T | *G. ahangari* 234T | *G. acetivorans* SBH6T | *F. placidus* DSM 10642T |
| *A. neptunius* SE56T | 1.00 | 0.62 | 0.29 | 0.21 | 0.27 | 0.30 | 0.26 | 0.27 |
| *A. fulgidus* VC-16T | 0.62 | 1.00 | 0.29 | 0.22 | 0.28 | 0.29 | 0.26 | 0.27 |
| *A. sulfaticallidus* PM70-1T | 0.29 | 0.29 | 1.00 | 0.21 | 0.29 | 0.29 | 0.26 | 0.24 |
| *A. profundus* AV18T | 0.21 | 0.22 | 0.21 | 1.00 | 0.27 | 0.20 | 0.21 | 0.22 |
| *A. veneficus* SNP6T | 0.27 | 0.28 | 0.29 | 0.27 | 1.00 | 0.27 | 0.25 | 0.24 |
| *G. ahangari* 234T | 0.30 | 0.29 | 0.29 | 0.20 | 0.27 | 1.00 | 0.63 | 0.39 |
| *G. acetivorans* SBH6T | 0.27 | 0.26 | 0.26 | 0.20 | 0.25 | 0.63 | 1.00 | 0.37 |
| *F. placidus* DSM 10642T | 0.27 | 0.27 | 0.24 | 0.22 | 0.24 | 0.39 | 0.37 | 1.00 |