|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DGGE band** | **Length** | **Bacteria Name** | **Affiliation phylum/class** | **Identification** | | **Location** | | | | | |
| **(bp)** | **UMT** | | **Ajil** | | | **Pahang** |
| SPM 1 | 521 | Uncultured *Flexibacter sp*. clone ZS-4-301(FN668188) | Bacteroidetes/Cytophagia | | 99% |  | • | |  | | |
| SPM 2 | 532 | *Bacillus sp.* strain CBZ11 (KX611437) | Firmicutes/Bacilli | | 96% | • |  | | • | | |
| SPM 3 | 517 | *Staphylococcus* sp. strain 112 (KY682067) | Firmicutes/Bacilli | | 95% | • | • | | |  | |
| SPM 4 | 532 | *Salinisphaera japonica* strain YTM-1(NR114341) | Proteobacteria/γ-protebacteria | | 98% | • | • | | | • | |
| SPM 5 | 564 | *Caballeronia* sp. strain PZS\_A03 (KY992890) | Proteobacteria/β-proteobacteria | | 98% | • |  | | | • | |
| SPM 6 | 563 | *Sphingomonas* sp. NC109 isolate BII-B1(LT548962) | Proteobacteria/α-proteobacteria | | 99% |  | • | | | • | |
| SPM 7 | 541 | *Sphingomonas leidyi* isolate BII-B5(LT548964) | Proteobacteria/α-proteobacteria | | 95% |  | • | | | • | |
| SPM 8 | 521 | *Bacteroides paurosaccharolyticus* strain M\_74 (MG428964) | Bacteroidetes/Bacteroidia | | 98% | • |  | | |  | |
| SPM 9 | 567 | *Staphylococcus* sp. AJAR-J1(HM103367) | Firmicutes/Bacilli | | 99% |  |  | | | • | |
| SPM 10 | 531 | *Pelomonas* sp. SM-2017 isolate: SM72(LC218391) | Proteobacteria/β-proteobacteria | | 99% | • | • | | | • | |
| SPM 11 | 531 | *Staphylococcus sp*. strain YM03(KX377555) | Firmicutes/Bacilli | | 99% | • | • | | | • | |
| SPM 12 | 538 | *Sphingomonas zeae* strain GM-B4(KX682019) | Proteobacteria/α-proteobacteria | | 99% |  | • | | |  | |
| SPM 13 | 541 | Uncultured planctomycete clone LZX215 (JN868170) | Planctomycetes/Planctomycetia | | 99% |  |  | | | • | |
| SPM 14 | 566 | *Mycobacterium obuense* strain 22DIII ( KT347499) | Actinobacteria/ Corynebacteriales | | 95% |  | • | | |  | |
| SPM 15 | 547 | *Propionibacterium acnes* isolate: #4860 (AB108478) | Actinobacteria/Actinobacteria | | 99% |  | • | | |  | |
| SPM 16 | 543 | Uncultured bacterium clone ncd2135c06c1(JF184031) | Unidentified | | 96% | • | • | | |  | |
| SPM 17 | 550 | Uncultured *Propionibacterium* sp. clone CON22-2 (MG697049) | Actinobacteria/Actinobacteria | | 99% |  | • | | |  | |
| SPM 18 | 544 | Uncultured *Propionibacterium* sp. clone CON24-14 (MG697065) | Actinobacteria/Actinobacteria | | 99% |  | • | | | • | |
| SPM 19 | 544 | Uncultured bacterium clone ncd2135c06c (JF184031) | Unidentified | | 99% | • | • | | | • | |
| SPM 20 | 511 | *Pseudonocardia* sp. IIUMK7-13 (KT803943) | Actinobacteria/Actinobacteria | | 91% | • | • | | |  | |

**Supplemental Table 1** Representative band profile from sperm microbiota from different location