**Table S1:**

**Accession numbers and organism of origin of the sequences used for the phylogenetic analysis of KS domains.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Accession** | **Organism** | **Accession** | **Organism** |
| NP 199441.1  | *Arabidopsis thaliana*  | WP 093651808.1  | *Streptomyces wuyuanensis* |
| AGC65509.1  | *Carthamus tinctorius* | AIL50179.1  | *Streptomyces aureus* |
| KVG91898.1  | *Cynara cardunculus*  | CAK50776.1  | *Streptomyces argillaceus* |
| KVI00884.1  | *Cynara cardunculus*  | AAV48829.2 | *Streptomyces spiramyceticus* |
| XP 022025436.1  | *Helianthus annuus* | AAB36562.1  | *Streptomyces venezuelae*  |
| OJV07714.1  | *Chlamydiales bacterium*  | NP 199441.1  | *Arabidopsis thaliana* |
| CRX38508.1  | *Estrella lausannensis* | AAB61310.  | *Allium ampeloprasum* |
| WP\_042103505.1  | *Parachlamydiaceae bacterium*  | ABE73469.1 | *Elaeis guineensis* |
| WP 068470483.1  | *Parachlamydia sp.* | EOY27735.1  | *Theobroma cacao* |
| WP\_032125192.1  | *Chlamydia sp.*  | XP 002863412.1  | *Arabidopsis lyrata*  |
| WP\_059060254.1 | *Protochlamydia naegleriophila* | CAA80452.1  |  *Spinacia oleracea* |
| WP\_039359465.1  | *Protochlamydia amoebophila* | EYB32591.1  | *Fusarium graminearum* |
| WP\_075883222.1 | *Protochlamydia* | AJE53317.1  | *Paenibacillus polymyxa* |
| NP 081971.1 | *Mus musculus*  | AEZ53952.1  | *Streptomyces albus* |
| NP\_001093978.1  | *Rattus norvegicus* | AGL16670.1 | *Actinoplanes sp.* |
| OBS66480.1 | *Neotoma lepida* | AHH94845.1 | *Kutzneria albida*  |
| XP\_005081045.1  | *Mesocricetus auratus* | WP\_044568899.1  | *Streptomyces iranensis* |
| XP\_021534485.1  | *Neomonachus schauinslandi* | WP\_043437269.1  | *Streptomyces nodosus* |
| XP\_012290981.1  | *Aotus nancymaae* | WP\_015801519.1  | *Actinosynnema mirum* |
| XP\_008057440.1 | *Carlito syrichta* | ABP55210.1  | *Salinispora tropica*  |
| pdb 2C9H | *mitochondrial Chain A* | ADI03792.1  | *Streptomyces bingchenggensis*  |
| NP 060367.1 | *Homo sapiens*  | WP\_048894517.1  | *Streptomyces avermitilis* |
| pdb 2IWY | *Human Mitochondrial*  | WP\_062008639.1  | *Streptomyces hygroscopicus* |
| WP 031486374.1  | *Streptomyces bicolor* | QDQ16835.1  | *Streptomyces sporocinereus* |

\*Data taken from NCBI (<https://www.ncbi.nlm.nih.gov>)