**Table S2. Accession numbers of PAS-LuxR homologues used for phylogenetic trees.**

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| --- | --- |
| **Name** | **Accession number** |
| AmphRIV\_Streptomyces nodosus | AAV37062.1 |
| Biosynthetic protein\_Streptomyces aureofuscus | ACD75765.1 |
| CfaR\_Streptomyces scabiei | YP\_003493449.1 |
| CppRIV\_Pseudonocardia autotrophica | ABV83236.1 |
| FscRI-1\_Streptomyces albulus | WP\_016577550.1 |
| FscRI-1\_Streptomyces albus | WP\_003946517.1 |
| FscRI\_Streptomyces albulus | WP\_016570421.1 |
| FscRI\_Streptomyces albus | YP\_007749177.1 |
| Hypothetical protein-1\_Amycolatopsis benzoatilytica | WP\_020659271.1 |
| Hypothetical protein-1\_Salinispora pacifica | WP\_018725106.1 |
| Hypothetical protein-1\_Streptomyces prunicolor | WP\_019062029.1 |
| Hypothetical protein-1\_Streptomyces sp | WP\_018554963.1 |
| Hypothetical protein-2\_Streptomyces sp. | WP\_017946556.1 |
| Hypothetical protein\_Actinoalloteichus spitiensis | WP\_016700531.1 |
| Hypothetical protein\_Actinokineospora enzanensis | WP\_018680905.1 |
| Hypothetical protein\_Amycolatopsis balhimycina | WP\_020638021.1 |
| Hypothetical protein\_Amycolatopsis benzoatilytica | WP\_020659273.1 |
| Hypothetical protein\_Amycolatopsis nigrescens | WP\_020673261.1 |
| Hypothetical protein\_Salinispora pacifica | WP\_018827366.1 |
| Hypothetical protein\_Sciscionella marina | WP\_020494548.1 |
| Hypothetical protein\_Streptomyces prunicolor | WP\_019062028.1 |
| Hypothetical protein\_Streptomyces sp. | WP\_019328950.1 |
| NRII\_Streptomyces chattanoogensis | ACM45445.1 |
| NRII\_Streptomyces gilvosporeus | ACM45446.1 |
| NysRIV\_Streptomyces noursei | AAF71781.1 |
| PAS domain S-box protein\_Streptomyces sp. | WP\_016467294.1 |
| PAS-LuxR family transcriptional regulator-1 \_Streptomyces bingchenggensis | YP\_004958910.1 |
| PAS-LuxR family transcriptional regulator-1\_Streptomyces himastatinicus | WP\_009712487.1 |
| PAS-LuxR family transcriptional regulator-1\_Streptomyces rapamycinicus | WP\_020866044.1 |
| PAS-LuxR family transcriptional regulator-1\_Streptomyces sp. | WP\_018469600.1 |
| PAS-LuxR family transcriptional regulator-2\_Streptomyces bingchenggensis | YP\_004967281.1 |
| PAS-LuxR family transcriptional regulator-2\_Streptomyces himastatinicus | WP\_009712640.1 |
| PAS-LuxR-family transcriptional regulator-1\_Streptomyces hygroscopicus | YP\_006242418.1 |
| PAS-LuxR family transcriptional regulator\_Actinosynnema mirum | YP\_003102220.1 |
| PAS-LuxR family transcriptional regulator\_Amycolatopsis decaplanina | WP\_007029767.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces auratus | WP\_006607812.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces avermitilis | NP\_821584.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces bingchenggensis | YP\_004967325.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces clavuligerus | WP\_003959350.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces griseoflavus | WP\_004936272.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces hygroscopicus | YP\_006242550.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces rapamycinicus | WP\_020866268.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces sp. | WP\_019328946.1 |
| PAS-LuxR family transcriptional regulator\_Streptomyces zinciresistens | WP\_007491099.1 |
| PimM protein\_Streptomyces natalensis | CAM35468.1 |
| Positive regulator\_Streptomyces hygrospinosus | AFQ68276.1 |
| Putative PAS-LuxR-family transcriptional regulator\_Streptomyces ambofaciens | CAJ89366.1 |
| Regulator\_Streptomyces sp. | ABB88526.1 |
| Regulatory protein LuxR-1\_Streptomyces violaceusniger | YP\_004814000.1 |
| Regulatory protein LuxR\_Streptomyces gancidicus | WP\_006129792.1 |
| Regulatory protein LuxR\_Streptomyces violaceusniger | YP\_004813791.1 |
| SalRIII\_Streptomyces albus | ABG02265.1 |
| Transcription regulatory protein\_Amycolatopsis azurea | WP\_005165576.1 |