**Supplementary Table S1.** Dioecious plants with reference genome and convinced sexual system in a phylogenetic perspective

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Family** | **Species** | **Sexual system** | **Plastome record** | **Reference** |
| **Female** | **Male** |
| Ditrichaceae | *Ceratodon purpureus* | U | V | PRJNA258984 | [1] |
| Marchantiaeceae | *Marchantia inflexa* | U | V | PRJNA476339 | [2] |
| *Marchantia polymorpha* | U | V | NC\_001319.1 | [3] |
| Cycadaceae | *Cycas panzhihuaensis* | XX | XY | NC\_031413.1 | [4] |
| Ginkoaceae | *Ginkgo biloba* | XX | XY | NC\_027976.1 | [5,6] |
| Amborellaceae | *Amborella trichopoda* | ZW | ZZ | NC\_005086.1 | [7] |
| Asparagaceae | *Asparagus officinalis* | XX | XY | NC\_034777.1 | [8,9] |
| Arecaceae | *Phoenix dactylifera* | XX | XY | NC\_013991.2 | [10] |
| Dioscoreaceae | *Dioscorea alata* | XX | XY | NC\_039707.1 | [11] |
| *Dioscorea rotundata* | ZW | ZZ | NC\_024170.1 | [12] |
| Actinidiaceae | *Actinidia chinensis* | XX | XY | NC\_026690.1 | [13,14] |
| Ebenaceae | *Diospyros lotus* | XX | XY | NC\_030786.1 | [15,16] |
| Amaranthaceae | *Spinacia oleracea* | XX | XY | NC\_002202.1 | [17] |
| *Amaranthus tuberculatus* | XX | XY | PRJNA38543 | [18] |
| Polygonaceae | *Rumex hastatulus* | XX | XY | NC\_050928.1 | [19] |
| Vitaceae | *Vitis vinifera* | XX | XY | NC\_007957.1 | [20] |
| Caricaceae | *Carica papaya* | XX | XY | NC\_010323.1 | [21,22] |
| Anacardiaceae | *Pistacia vera* | ZW | ZZ | NC\_034998.1 | [23] |
| Myricaceae | *Morella rubra* | ZW | ZZ | NC\_035006.1 | [24] |
| Rosaceae | *Fragaria × ananassa* | ZW | ZZ | NC\_035961.1 | [25,26] |
| Elaeagnaceae  | *Hippophae rhamnoides* | XX | XY | NC\_035548.1 | [27] |
| Moraceae | *Ficus hispida* | XX | XY | NC\_053834.1 | [28] |
| Cannabaceae  | *Cannabis sativa* | XX | XY | NC\_027223.1 | [29] |
| *Humulus lupulus* | XX | XY | NC\_028032.1 | [30] |
| Euphorbiaceae | *Mercurialis annua* | XX | XY | PRJNA369310 | [31] |
| Salicaceae | *Populus alba* | ZW | ZZ | NC\_008235.1 | [32] |
| *Populus deltoides* | XX | XY | NC\_040929.1 | [33] |
| *Populus euphratica* | XX | XY | NC\_024747.1 | [34] |
| *Populus tremula* | XX | XY | NC\_027425.1 | [32] |
| *Populus trichocarpa* | XX | XY | NC\_009143.1 | [32,35] |
| *Salix purpurea* | ZW | ZZ | NC\_029693.1 | [36] |
| *Salix suchowensis* | ZW | ZZ | NC\_026462.1 | [37] |
| *Salix viminalis* | ZW | ZZ | PRJEB31619 | [38] |

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