**Supplementary Material**

***Kapraunia silviae* (Rhodomelaceae, Rhodophyta), a new species from the South Atlantic Ocean**

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**Table S1:** GenBank sequences information from COI-5P and *rbc*L.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Taxon** | **Voucher** | **Locality** | **Author** | **COI-5P** | ***rbc*L** |
| *Acanthosiphonia echinata* | GWS006239 | Canada, New Brunswick | Savoie and Saunders (2019) |  | MF120862 |
| *Acanthosiphonia echinata* |  | Canada, Nova Scotia | Savoie and Saunders (2019) | MF120744 |  |
| *Acanthosiphonia echinata* | TC8871 | Indonesia, Palau | Bustamante *et al.* (2021) | KM609436 | KM609433 |
| *Bryocladia cuspidata* |  |  | Lin *et al.* (2001) |  | AF259498 |
| *Bryocladia scopulorum* |  | USA |  | HQ544219 |  |
| *Bryocladia scopulorum* | GWS006329 | Canada, British Columbia | Savoie and Saunders (2019) |  | MF120852 |
| *Bryocladia subtilissima* | PHYKOS-3271 | Panama, Bocas del Toro | Mamoozadeh *et al.* (2012) | HM573528 | HM573575 |
| *Bryocladia subtilissima* |  | Spain | Lam *et al.* (2013) | JX294916 |  |
| *Bryocladia thyrsigera* | CUPVOUCHER-Brth-2020-1 | India | Kundu and Bast (2020) | MT887609 | MT906852 |
| *Bryocladia thyrsigera* | CUPVOUCHER-Brth-2020-2 | India | Kundu and Bast (2020) | MT887610 |  |
| *Bryocladia thyrsigera* | PD619 | Brazil, Espirito Santo | Díaz-Tapia *et al.* (2020) |  | MT676134 |
| *Carradoriella denudata* |  | United Kingdom, Plymouth England | McIvor *et al*. (2001) | MF094029 | AF342914 |
| *Carradoriella elongata* | GWS030132 | USA, Massachusetts | Savoie and Saunders (2019) |  | MF120875 |
| *Carradoriella elongata* | GWS030153 | USA, Massachusetts | Savoie and Saunders (2019) | MF120749 |  |
| *Carradoriella elongata* | TC8871Indo | Indonesia: Donggala | Bustamante *et al.*(2014) | KM609436 |  |
| *Carradoriella platensis*  | CUK8558 | Argentina | Bustamante *et al.* (2021) |  | MT597087 |
| *Carradoriella platensis* | CUK8563 | Argentina | Bustamante *et al.* (2021) | MT597071 | MT597089 |
| *Carradoriella virgata* | GWS036360 | South Africa, Western Cape | Savoie and Saunders (2019) | MF120718 | MF120872 |
| *Eutrichosiphonia confusa* | TC607 |  | Bustamante (2015) |  | KR090584 |
| *Eutrichosiphonia confusa* | CUK609 | USA, California | Bustamante *et al.* (2021) | MT597066 | MT597098 |
| *Eutrichosiphonia paniculata* | GWS022071 | USA |  |  | HQ544183 |
| *Eutrichosiphonia paniculata* | TC12236 | Korea | Bustamante (2015) |  | KR090580 |
| *Eutrichosiphonia paniculata* | CUK6476 | Chile | Bustamante *et al.* (2021) | KR090571 | KR090581 |
| *Eutrichosiphonia paniculata* | CUK6524 | Peru | Bustamante *et al.* (2021) | KR090577 |  |
| *Eutrichosiphonia tapinocarpa* | CUK4120 | Japan | Bustamante *et al.* (2021) | MT597065 | MT597093 |
| *Kapraunia amplacapili* | 12sp04-02 | Korea, Jeju | Kim and Kim (2014) |  | KF479251 |
| *Kapraunia morroides* | 12sp05-01 | Korea, Jeju | Kim and Kim (2014) |  | KF479254 |
| *Kapraunia pentamera* | PHYKOS-1995 | Panama, Colon | Mamoozadeh *et al.* (2012) | HM573510 | HM573563 |
| *Kapraunia pentamera* | PHYKOS-3292 | Panama, Veraguas | Mamoozadeh *et al.* (2012) |  | HM573564 |
| *Kapraunia schneideri* | GWS031241 | USA, South Carolina | Savoie and Saunders (2019) |  | MF120863 |
| *Kapraunia schneideri* | CUK2089 | USA, Florida | Bustamante *et al.* (2021) |  | MT597079 |
| *Kapraunia schneideri* | GWS031240 | USA, South Carolina | Savoie and Saunders (2019) | MF120606 | MF120837 |
| *Kapraunia schneideri* | EC061 | USA: Rhode Island | Savoie and Saunders (2019) | MF543366 |  |
| *Kapraunia schneideri* | WCN2005-s140-s146 | USA, North Carolina | Freshwater *et al.* (2010) | GU385829 |  |
| *Kapraunia schneideri* | GWS031241 | USA, South Carolina | Savoie and Saunders (2019) | MF120708 |  |
| *Kapraunia schneideri* | MV#2 | Italy | Wolf *et al.* (2017) |  | LT745386 |
| *Kapraunia schneideri* | FL05-4 | USA, Florida | Mamozadeh *et al.* (2012) | HM573514 | HM573567 |
| *Kapraunia schneideri* | WNC2004-029; Poly NC-2 | USA: North Carolina | Freshwater *et al.* (2010) | GU385828 |  |
| *Kapraunia schneideri* | PHYKOS-2689 | Panama, Colon | Mamozadeh *et al.* (2012) | HM573513 | HM573565 |
| *Kapraunia schneideri* | PHYKOS-3189 | Panama, Boca | Freshwater *et al.* (2010) | HM573515 | GU385837 |
| *Kapraunia schneideri* | PHYKOS-2454 | Panama, Colon | Mamozadeh *et al.* (2012) | HM573516 | HM573566 |
| *Kapraunia schneideri* | DWF-2010a | Bermuda, Harrison Sound | Freshwater *et al.* (2010) |  | GU385836 |
| *Kapraunia schneideri* | 26065 | Spain | Díaz-Tapia *et al.* (2013) |  | JQ653298 |
| *Kapraunia sp.* | DWF-2011 | Panama, Veraguas | Mamozadeh *et al.* (2012) | HM573508 | HM573562 |
| *Melanothamnus bajacali* | MEX04-9 | Mexico, Yucatan | Mamoozadeh *et al*. (2012) | HM573526 | HM573572 |
| *Melanothamnus collabens* | CH2526 | Spain, Coruña | Barbara *et al.* (2013) |  | JX828157 |
| *Melanothamnus collabens* | SANT-Algae-24251 | Portugal | Díaz-Tapia and Barbara (2013) | KF671158 |  |
| *Melanothamnus ferulaceus* | PHYKOS-1996 | Panama, Colon | Mamoozadeh *et al*. (2012) | HM573512 | HM573574 |
| *Melanothamnus ferulaceus* | GGS008 | Venezuela: Falcon | Garcia-Soto and Lopez-Bautista(2017) | MH388709 |  |
| *Melanothamnus ferulaceus* | PHYKOS-2287 | Panama, Colon | Mamoozadeh *et al*. (2012) |  | HM573584 |
| *Melanothamnus harveyi* | GWS030060 | USA, Rhode Island | Savoie and Saunders (2019) |  | KM894066 |
| *Melanothamnus harveyi* | NC-22 | USA, North Carolina | Mamoozadeh *et al*. (2010) | HM573500 |  |
| *Melanothamnus japonicus* | GWS030049 | USA, Rhode Island | Savoie and Saunders (2019) | KM894048 | KM894063 |
| *Melanothamnus japonicus* | 12ja01 | Japan: Hakodate | Kim *et al.* (2016) | KX265516 |  |
| *Melanothamnus japonicus* | PD1419 | Australia, Victoria | Pineiro-Cordobeira *et al.* (2020) |  | MN419278 |
| *Melanothamnus maniticola* | M\_93 | USA, Florida | Woodworth *et al.* (2019) | MK971667 | MK971677 |
| *Melanothamnus maniticola* | M\_96 | USA, Florida | Woodworth *et al.* (2019) | MK971670 |  |
| *Melanothamnus maniticola* | M\_128 | USA, Florida | Woodworth *et al.* (2019) |  | MK971673 |
| *Melanothamnus somalensis* | 2774 | Oman | Díaz-Tapia *et al.* (2017) |  | KX499555 |
| *Melanothamnus peruviensis* | CUK6474 | Peru | Bustamante *et al.* (2021) | MT597059 | JN989969 |
| *Melanothamnus pseudoforcipatus* | SANT-Algae-28188 | Spain, Rande | Díaz-Tapia *et al.* (2017) | KY620040 | KY620089 |
| *Melanothamnus somalensis* | GWS014134 | Oman: Dhofar | Savoie and Saunders (2016) | KU564334 | KX499555 |
| *Melanothamnus strictissimus* | NZ04-552 | New Zealand, North Island | Freshwater *et al.* (2010) | HM573533 | GU385833 |
| *Melanothamnus strictissimus* | NZ04-39 | New Zealand: South Island | Mamoozadeh *et al.* (2010) | HM573530 |  |
| *Melanothamnus strictissimus* | NZ04-147 | New Zealand: Stewart Island | Freshwater *et al.* (2010) | HM573534 |  |
| *Melanothamnus strictissimus* | PD3482 | Tasmania, Bischeno | Pineiro-Cordobeira *et al.* (2020) |  | MN419277 |
| *Melanothamnus testudinis* | KaS-2019a | Italy | Sciuto (2019) | LR735988 |  |
| *Melanothamnus tongatensis* | PHYKOS-2704 | Panama, Colon | Mamoozadeh *et al.* (2012) | HM573518 | HM573570 |
| *Melanothamnus unilateralis* | JF0192 | Chile | Díaz-Tapia *et al.* (2017) | MF094027 | KX499549 |
| *Melanothamnus yendoi* | 14yen07 | Japan | Kim *et al.* (2016) | KX265577 |  |
| *Savoiea bipinnata* | GWS030845 | Canada, British Columbia | Savoie and Saunders (2016) | KU564325 | KU564455 |
| *Savoiea bipinnata* | CUK2956 | USA, Alaska | Bustamante *et al.* (2021) | MT597061 | MT597083 |
| *Savoiea hamata* | GWS030701 | Canada, British Columbia | Savoie and Saunders (2016) |  | KU564475 |
| *Savoiea hamata* | GWS046213 | Canada, British Columbia | Saunders (2021) | OK502251 |  |
| *Savoiea hamata* | GWS030978 | Canada, British Columbia | Savoie and Saunders (2016) | KU564351 | KU564465 |
| *Streblocladia glomerulata* | NZ04-185 | New Zealand | Díaz-Tapia *et al.* (2017) |  | KX499569 |
| *Streblocladia muelleriana* | ASQ081 | New Zealand | Kim *et al.* (2018) |  | MH230129 |
| *Vertebrata lanosa* |  | United Kingdom | Bustamante *et al.* (2021) | MT597075 | MT597104 |
| *Vertebrata patersonis* | CUK11114 | Australia | Bustamante *et al.* (2021) | MT597077 | MT597110 |

**Table S2:** Genetic distances of *Kapraunia* species of *rbc*L in %. (-) indicates identical sequences.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PP395808** | **PP401680** | **PP401681** | **PP401682** | MT597079 | MF120863 | LT745386 | GU385836 | JQ653298 | GU385837 | HM573565 | HM573567 | KF479251 | HM573564 | HM573563 | KF479254 |
| **PP395808 *Kapraunia silviae*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PP401680 *Kapraunia silviae*** | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PP401681 *Kapraunia silviae*** | - | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PP401682 *Kapraunia silviae*** | - | - | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MT597079 *Kapraunia schneideri* USA | 2.87 | 2.87 | 2.87 | 2.87 |  |  |  |  |  |  |  |  |  |  |  |  |
| MF120863 *Kapraunia schneideri* USA | 2.87 | 2.87 | 2.87 | 2.87 | - |  |  |  |  |  |  |  |  |  |  |  |
| LT745386 *Kapraunia schneideri* Italy | 2.70 | 2.70 | 2.70 | 2.70 | 0.16 | 0.16 |  |  |  |  |  |  |  |  |  |  |
| GU385836 *Kapraunia schneideri* Bermuda | 2.53 | 2.53 | 2.53 | 2.53 | 1.01 | 1.01 | 1.18 |  |  |  |  |  |  |  |  |  |
| JQ653298 *Kapraunia schneideri* Panama | 2.70 | 2.70 | 2.70 | 2.70 | 1.18 | 1.18 | 1.35 | 0.16 |  |  |  |  |  |  |  |  |
| GU385837 *Kapraunia schneideri* Panama | 2.36 | 2.36 | 2.36 | 2.36 | 0.5 | 0.5 | 0.67 | 0.5 | 0.67 |  |  |  |  |  |  |  |
| HM573565 *Kapraunia schneideri* Panama  | 2.53 | 2.53 | 2.53 | 2.53 | 0.67 | 0.67 | 0.84 | 0.67 | 0.84 | 0.16 |  |  |  |  |  |  |
| HM573567 *Kapraunia schneideri* USA | 2.70 | 2.70 | 2.70 | 2.70 | 0.16 | 0.16 | 0.33 | 0.84 | 1.01 | 0.33 | 0.5 |  |  |  |  |  |
| KF479251 *Kapraunia amplacapili* Korea | 2.02 | 2.02 | 2.02 | 2.02 | 2.70 | 2.70 | 2.87 | 2.53 | 2.70 | 2.36 | 2.53 | 2.53 |  |  |  |  |
| HM573564 *Kapraunia pentamera* Panama | 5.57 | 5.57 | 5.57 | 5.57 | 5.06 | 5.06 | 5.23 | 4.89 | 5.06 | 4.89 | 5.06 | 4.89 | 5.4 |  |  |  |
| HM573563 *Kapraunia pentamera* Panama | 5.4 | 5.4 | 5.4 | 5.4 | 4.89 | 4.89 | 5.06 | 4.72 | 4.89 | 4.72 | 4.89 | 4.72 | 5.23 | 0.5 |  |  |
| KF479254 *Kapraunia morroides* Korea | 7.77 | 7.77 | 7.77 | 7.77 | 8.78 | 8.78 | 8.78 | 8.61 | 8.78 | 8.61 | 8.78 | 8.61 | 8.10 | 7.09 | 7.43 |  |

**Table S3:** Genetic distances of *Kapraunia* species of COI-5P in %. (-) indicates identical sequences.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PP401683** | **PP401683** | **PP401685** | **PP401686** | HM573510 | GU385828 | HM573513 | HM573516 | HM573514 | GU385829 | HM573515 | MF120606 | MF120708 | MF543366 | HM573508 |
| **PP401683 *Kapraunia silviae***  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PP401683 *Kapraunia silviae***  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PP401685 *Kapraunia silviae*** | 0.18 | 0.18 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PP401686 *Kapraunia silviae*** | 0.36 | 0.36 | 0.54 |  |  |  |  |  |  |  |  |  |  |  |  |
| HM573510 *Kapraunia pentamera* Panama  | 7.45 | 7.45 | 7.27 | 7.45 |  |  |  |  |  |  |  |  |  |  |  |
| GU385828 *Kapraunia schneideri* USA | 7.81 | 7.81 | 7.63 | 7.81 | 6.36 |  |  |  |  |  |  |  |  |  |  |
| HM573513 *Kapraunia schneideri* i Panama | 7.45 | 7.45 | 7.27 | 7.45 | 6.36 | 2.18 |  |  |  |  |  |  |  |  |  |
| HM573516 *Kapraunia schneideri* Panama | 7.63 | 7.63 | 7.45 | 7.63 | 6.36 | 2.54 | 0.18 |  |  |  |  |  |  |  |  |
| HM573514 *Kapraunia schneideri* USA | 7.81 | 7.81 | 7.63 | 7.81 | 6.54 | 0.16 | 2.36 | 3.09 |  |  |  |  |  |  |  |
| GU385829 *Kapraunia schneideri* USA | 8 | 8 | 7.81 | 8 | 6.54 | 0.18 | 2.36 | 2.72 | 0.18 |  |  |  |  |  |  |
| HM573515 *Kapraunia schneideri* Panama | 8 | 8 | 7.81 | 8 | 6.18 | 2.36 | 0.14 | 2.36 | 2.90 | 2.54 |  |  |  |  |  |
| MF120606 Kapraunia scheneideri USA | 8 | 8 | 7.81 | 8 | 6.54 | 0.18 | 2.36 | 2.72 | 0.18 | - | 2.54 |  |  |  |  |
| MF120708 *Kapraunia schneideri* USA | 8 | 8 | 7.81 | 8 | 6.54 | 0.18 | 2.36 | 2.72 | 0.18 | - | 2.54 | - |  |  |  |
| MF543366 *Kapraunia schneideri* USA | 8 | 8 | 7.81 | 8 | 6.54 | 0.18 | 2.36 | 2.72 | 0.18 | - | 2.54 | - | - |  |  |
| HM573508 *Kapraunia* sp. USA | 8.36 | 8.36 | 8.18 | 8.36 | 5.81 | 7.09 | 6.36 | 6.72 | 7.27 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 |  |