

## IAPT CHROMOSOME DATA

## IAPT chromosome data 46

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**Supporting Information** may be found online in the Supporting Information section at the end of the article.

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Abbreviations: GPB, General Purpose Buffer; LB01, Lysis Buffer; OXPRO, CyStain PI OxProtect buffer.

### CYPERACEAE

#### *Carex* subg. *Carex*

##### *Carex sect. Acrocystis* Dumort.

*Carex montana* L.

The CVs of sample and internal standard were 3.98% and 3.20%, respectively, using *Solanum* as standard and GPB.

$2C = 0.75 \pm 0.006$  pg, PI FCM. Spain, Álava, “Montes Altos de Vitoria”, Txaparca ravine,  $42^{\circ}48'02.3''N$ ,  $02^{\circ}37'43.3''W$ , 04 Jun 2022, R. Sánchez-Villegas & al. 52RSV22 (UPOS).

##### *Carex sect. Ceratocystis* Dumort.

*Carex demissa* Hornem.

The CVs of sample and internal standard were 4.92% and 4.16%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.007$  pg, PI FCM. New Zealand, South Island, Southland Land District, Aparima Valley,  $45^{\circ}43'08.7''S$ ,  $168^{\circ}00'24.7''E$ , 28 Jan 2024, A. Morales-Alonso & al. 22NZ-AMA24 (CHR, UPOS).

*Carex demissa* Hornem.  $\times$  *Carex lepidocarpa* Tausch

The CVs of sample and internal standard were 4.92% and 4.16%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.026$  pg, PI FCM. France, Dpt. Ariège, Artigues, near to the Noubals reservoir,  $42^{\circ}43'02.9''N$ ,  $02^{\circ}03'21.7''E$ , 17 Jul 2023, S. Martín-Bravo & al. 94SMB23 (UPOS).

##### *Carex flaviformis* Nelmes

The CVs of sample and internal standard were 4.82% and 4.17%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Tasman Land District, 1000 Acre Plateau, Matiri Valley,  $41^{\circ}36'14.1''S$ ,  $172^{\circ}19'37.7''E$ , 07 Feb 2024, A. Morales-Alonso & al. 124NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.48% and 3.92%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.005$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Spider Lakes,  $43^{\circ}36'24.2''S$ ,  $171^{\circ}07'05.7''E$ , 21 Feb 2024, A. Morales-Alonso & K. Ford 161NZ-AMA24 (CHR, UPOS).

#### *Carex hostiana* DC.

The CVs of sample and internal standard were 4.40% and 3.74%, respectively, using *Solanum* as standard and GPB.

$2C = 0.82 \pm 0.006$  pg, PI FCM. France, Dpt. Ariège, Artiguès, near to the Noubals reservoir,  $42^{\circ}43'02.9''N$ ,  $02^{\circ}03'21.7''E$ , 17 Jul 2023, S. Martín-Bravo & al. 97SMB23 (UPOS).

#### *Carex sagei* Phil.

The CVs of sample and internal standard were 3.98% and 2.85%, respectively, using *Solanum* as standard and LB01.

$2C = 0.85 \pm 0.0001$  pg, PI FCM. Chile, Los Lagos, Llanquihue, road to Sofía lake,  $41^{\circ}35'34.3''S$ ,  $72^{\circ}41'18.3''W$ , 27 Jan 2023, P. Jiménez-Mejías & al. 29PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.96% and 3.40%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.005$  pg, PI FCM. Chile, Araucanía, Malleco, Paso del Pino Hachado,  $38^{\circ}39'17.5''S$ ,  $70^{\circ}55'14.7''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 27PJM-CL23 (CONC, UPOS).

#### *Carex sect. Chlorostachya* Tuck. ex Meinh.

##### *Carex capillaris* L.

The CVs of sample and internal standard were 3.52% and 3.00%, respectively, using *Solanum* as standard and GPB.

$2C = 1.19 \pm 0.009$  pg, PI FCM. Switzerland, Canton of Bern, Grindelwald, path from the Eigergletscher cable car station to the Guggi Hütte,  $46^{\circ}34'21.0''N$ ,  $07^{\circ}58'10.0''E$ , 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 33RSV23 (UPOS).

#### *Carex sect. Clandestinae* G.Don

##### *Carex callitrichos* var. *nana* (H.Lév. & Vaniot) S.Yun Liang, L.K.Dai & Y.C.Tang

The CVs of sample and internal standard were 2.34% and 1.76%, respectively, using *Petroselinum* as standard and GPB.

$2C = 2.27 \pm 0.012$  pg, PI FCM. China, Anhui, Huangshan,  $30^{\circ}07'21.9''N$ ,  $118^{\circ}10'13.1''E$ , 02 Jun 2023, P. Jiménez-Mejías & al. 78PJM-CN23 (UPOS, ZJFC).

##### *Carex erythrobasis* H.Lév. & Vaniot

The CVs of sample and internal standard were 2.71% and 2.63%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 0.96 \pm 0.0001$  pg, PI FCM. South Korea, Mountain 214 in Gohan-ri, Gohan-eup, Jeongseon-gun, Gangwon-do,  $37^{\circ}09'29.4''N$ ,  $128^{\circ}54'43.0''E$ , 15 May 2022, Y. Cho & S. Kim 2022-022 (SWU0054275).

##### *Carex lanceolata* Boott

The CVs of sample and internal standard were 4.45% and 3.43%, respectively, using *Petroselinum* as standard and GPB.

$2C = 2.37 \pm 0.017$  pg, PI FCM. China, Anhui, Jiujuashan, Jiuhua Mountain,  $30^{\circ}27'57.9''N$ ,  $117^{\circ}49'01.1''E$ , 03 Jun 2023, P. Jiménez-Mejías & al. 80PJM-CN23 (UPOS, ZJFC).

##### *Carex ornithopoda* Willd.

The CVs of sample and internal standard were 4.44% and 3.55%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.007$  pg, PI FCM. Switzerland, Canton of Bern, Grindelwald, path from the Eigergletscher cable car station to the Guggi Hütte,  $46^{\circ}34'05.0''N$ ,  $07^{\circ}58'01.0''E$ , 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 34RSV23 (UPOS).

#### *Carex sect. Dissitiflorae* K.T.Takah. & M.N.Tamura

##### *Carex bostrychostigma* Maxim.

The CVs of sample and internal standard were 2.72% and 2.76%, respectively, using *Glycine* as standard and Otto I-II buffer.

$2C = 1.66 \pm 0.02$  pg, PI FCM. South Korea, Mt. Cheonmasan, Namyangju-si, Gyeonggi-do,  $37^{\circ}40'40.6''N$ ,  $127^{\circ}15'37.9''E$ , 16 Apr 2022, H. Moon & al. 2022-418 (SWU0060300).

The CVs of sample and internal standard were 3.45% and 3.25%, respectively, using *Solanum* as standard and GPB.

$2C = 1.59 \pm 0.009$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitiamu Natural Reserve,  $30^{\circ}20'28.1''N$ ,  $119^{\circ}26'41.5''E$ , 30 May 2023, P. Jiménez-Mejías & al. 30PJM-CN23 (UPOS, ZJFC).

#### *Carex sect. Echinochlaenae* Kük.

##### *Carex albula* Allan

The CVs of sample and internal standard were 4.39% and 3.94%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Mt. John Observatory, near Tekapo,  $43^{\circ}59'07.0''S$ ,  $170^{\circ}27'58.8''E$ , 01 Feb 2024, A. Morales-Alonso & al. 78NZ-AMA24 (CHR, UPOS).

##### *Carex buchananii* Berggr.

The CVs of sample and internal standard were 3.89% and 3.54%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.009$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Castle Hill Basin, Prebble Hill,  $43^{\circ}12'45.97''S$ ,  $171^{\circ}44'46.2''E$ , 29 Feb 2024, A. Morales-Alonso & K. Ford 169NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.93% and 4.09%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Ashburton Lakes,  $43^{\circ}29'27.2''S$ ,  $171^{\circ}10'44.6''E$ , 21 Feb 2024, A. Morales-Alonso & K. Ford 158NZ-AMA24 (CHR, UPOS).

##### *Carex cf. buchananii* Berggr.

The CVs of sample and internal standard were 4.37% and 3.22%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.006$  pg, PI FCM. New Zealand, commercial origin, cultivated in UPOS herbarium (UPOS).

The CVs of sample and internal standard were 3.83% and 3.14%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.003$  pg, PI FCM. New Zealand, commercial origin, cultivated in UPOS herbarium (UPOS).

##### *Carex chathamica* Petrie

The CVs of sample and internal standard were 4.44% and 3.69%, respectively, using *Solanum* as standard and GPB.

$2C = 0.93 \pm 0.005$  pg, PI FCM. New Zealand, South Island, Chatham Island, Rekohu, Ocean Bay Mail Scenic Reserve,  $44^{\circ}12'54.0''S$ ,  $176^{\circ}28'04.8''W$ , 28 Jan 2020, P. de Lange KF 755/20, cultivated in CHR greenhouse (CHR-667249).

##### *Carex cockayneana* Kük. ex Cheeseman

The CVs of sample and internal standard were 4.75% and 4.39%, respectively, using *Solanum* as standard and GPB.

$2C = 0.97 \pm 0.004$  pg, PI FCM. New Zealand, South Island, West Coast, Westland Land District, road to Okarito from Ross, near Whataroa River,  $43^{\circ}10'37.3"S$ ,  $170^{\circ}27'20.9"E$ , 04 Feb 2024, A. Morales-Alonso & P. Jiménez-Mejías 95NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.46% and 3.44%, respectively, using *Solanum* as standard and GPB.

$2C = 0.94 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Matiri Valley, near Matiri River,  $41^{\circ}39'44.5"S$ ,  $172^{\circ}19'51.0"E$ , 07 Feb 2024, A. Morales-Alonso & al. 140NZ-AMA24 (CHR, UPOS).

#### *Carex comans* Berggr.

The CVs of sample and internal standard were 4.81% and 4.64%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.000$  pg, PI FCM. New Zealand, South Island, Southland Land District, east end of Colac Bay, near Riverton,  $46^{\circ}21'41.6"S$ ,  $167^{\circ}56'55.3"E$ , 28 Jan 2024, A. Morales-Alonso & al. 14NZ-AMA24 (CHR, UPOS).

#### *Carex cf. comans* Berggr.

The CVs of sample and internal standard were 3.78% and 3.20%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.003$  pg, PI FCM. New Zealand, commercial origin, cultivated in UPOS herbarium (UPOS).

The CVs of sample and internal standard were 3.70% and 2.80%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.001$  pg, PI FCM. New Zealand, commercial origin, cultivated in UPOS herbarium (UPOS).

The CVs of sample and internal standard were 3.69% and 2.97%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.003$  pg, PI FCM. New Zealand, commercial origin, cultivated in UPOS herbarium (UPOS).

#### *Carex cremnica* K.A.Ford

The CVs of sample and internal standard were 4.04% and 3.90%, respectively, using *Solanum* as standard and GPB.

$2C = 0.93 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Hawkes Lookout,  $41^{\circ}17'13.8"S$ ,  $173^{\circ}07'36.5"E$ , 08 Feb 2024, A. Morales-Alonso & al. 148NZ-AMA24 (CHR, UPOS).

#### *Carex dallii* Kirk

The CVs of sample and internal standard were 4.76% and 3.98%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Southland Land District, West Dome, marshy area near road,  $45^{\circ}33'38.9"S$ ,  $168^{\circ}10'46.8"E$ , 16 Jan 2024, K. Ford & B. Rance KF 1216/24, cultivated in CHR greenhouse (CHR).

#### *Carex decurtata* Cheeseman

The CVs of sample and internal standard were 4.49% and 3.78%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.006$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Mackenzie Basin, W Irishman Stream,  $44^{\circ}08'54.6"S$ ,  $170^{\circ}20'31.0"E$ , 01 Feb 2024, A. Morales-Alonso & al. 77NZ-AMA24 (CHR, UPOS).

#### *Carex devia* Cheeseman

The CVs of sample and internal standard were 4.93% and 4.38%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Red Hills, Wairau Valley, next to Wairau

River, Nelson,  $41^{\circ}44'02.4"S$ ,  $172^{\circ}59'25.7"E$ , 08 Feb 2024, A. Morales-Alonso & al. 147NZ-AMA24 (CHR, UPOS).

#### *Carex dipsacea* Berggr.

The CVs of sample and internal standard were 4.72% and 3.65%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lake Coleridge area, Acheron River gorge,  $43^{\circ}21'38.5"S$ ,  $171^{\circ}37'28.7"E$ , 07 Mar 2020, S. Martín-Bravo & al. 227SMB-NZ (CHR, UPOS).

The CVs of sample and internal standard were 4.70% and 3.98%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lake Coleridge area, Acheron River gorge,  $43^{\circ}21'38.5"S$ ,  $171^{\circ}37'28.7"E$ , 07 Mar 2020, S. Martín-Bravo & al. 227SMB-NZ (CHR, UPOS).

The CVs of sample and internal standard were 4.63% and 3.21%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Waikari Reserve, Waikari,  $41^{\circ}24'32.3"S$ ,  $173^{\circ}02'22.1"E$ , 09 Feb 2024, A. Morales-Alonso & al. 153NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.21% and 4.16%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.013$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Ashburton Forks,  $43^{\circ}43'14.8"S$ ,  $171^{\circ}34'49.3"E$ , 21 Feb 2024, A. Morales-Alonso & K. Ford 157NZ-AMA24 (CHR, UPOS).

#### *Carex dissita* Sol. ex Boott

The CVs of sample and internal standard were 3.30% and 3.99%, respectively, using *Solanum* as standard and GPB.

$2C = 3.05 \pm 0.012$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Mt. Somers, South Face Track,  $43^{\circ}37'43.9"S$ ,  $171^{\circ}24'58.9"E$ , 21 Feb 2024, A. Morales-Alonso & K. Ford 163NZ-AMA24 (CHR, UPOS).

#### *Carex druceana* Hamlin

The CVs of sample and internal standard were 4.40% and 3.74%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.003$  pg, PI FCM. New Zealand, North Island, Wellington Land District, Ruahine Range, Rangiwahia,  $39^{\circ}53'37.6"S$ ,  $176^{\circ}02'28.6"E$ , 29 Jan 2023, K. Ford & al. KF 1133/23, cultivated in CHR greenhouse (UPOS).

#### *Carex edgariae* Hamlin

The CVs of sample and internal standard were 4.86% and 3.44%, respectively, using *Solanum* as standard and GPB.

$2C = 0.81 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Otago Land District, Motatapu Station, North Branch,  $44^{\circ}43'40.4"S$ ,  $168^{\circ}53'18.9"E$ , 18 Dec 2021, C. Morse KF 1000/21, cultivated in CHR greenhouse (CHR-674608).

The CVs of sample and internal standard were 3.53% and 2.69%, respectively, using *Solanum* as standard and GPB.

$2C = 0.81 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Otago Land District, Motatapu Station, North Branch,  $44^{\circ}43'40.4"S$ ,  $168^{\circ}53'18.9"E$ , 18 Dec 2021, C. Morse KF 1000/21, cultivated in CHR greenhouse (UPOS).

The CVs of sample and internal standard were 3.84% and 2.66%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Otago Land District, Motatapu Station, North Branch,  $44^{\circ}43'40.4''$  S,  $168^{\circ}53'18.9''$  E, 18 Dec 2021, C. Morse KF 1000/21, cultivated in CHR greenhouse (UPOS).

#### *Carex fernandezensis* Mack. ex G.A.Wheeler

The CVs of sample and internal standard were 3.86% and 3.38%, respectively, using *Solanum* as standard and LB01.

$2C = 0.80 \pm 0.001$  pg, PI FCM. Chile, Islas Juan Fernández, Robinson Crusoe Island, Parque Nacional Archipiélago de Juan Fernández, trail to Mirador Alejandro Selkirk, descending from Portezuelo de Villagra towards Villagra, cultivated in Diego N. Pennekamp's private garden,  $33^{\circ}38'16.63''$  S,  $78^{\circ}51'12.24''$  W, 25 Jan 2023, M. Sanz-Arnal & al. 26MSA-CL23 (CONC, UPOS).

#### *Carex flagelliflora* Colenso

The CVs of sample and internal standard were 5.09% and 4.33%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.006$  pg, PI FCM. New Zealand, South Island, West Coast, Westland Land District, Three Mile Track to Okarito Lagoon,  $43^{\circ}13'32.9''$  S,  $170^{\circ}09'36.6''$  E, 04 Feb 2024, A. Morales-Alonso & al. 100NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.36% and 4.45%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Ashburton Forks,  $43^{\circ}43'14.8''$  S,  $171^{\circ}34'49.3''$  E, 21 Feb 2024, A. Morales-Alonso & K. Ford 156NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.14% and 4.30%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Castle Hill Basin, Prebble Hill,  $43^{\circ}12'34.1''$  S,  $171^{\circ}45'08.1''$  E, 29 Feb 2024, A. Morales-Alonso & K. Ford 168NZ-AMA24 (CHR, UPOS).

#### *Carex forsteri* Wahlenb.

The CVs of sample and internal standard were 4.23% and 3.62%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Mt. Somers, South Face Track,  $43^{\circ}37'43.9''$  S,  $171^{\circ}24'58.9''$  E, 21 Feb 2024, A. Morales-Alonso & K. Ford 166NZ-AMA24 (CHR, UPOS).

#### *Carex freatalis* Hamlin

The CVs of sample and internal standard were 3.74% and 3.83%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.006$  pg, PI FCM. New Zealand, South Island, Southland Land District, Slope Point, 100+ m from the cliff top,  $46^{\circ}40'16.4''$  S,  $168^{\circ}59'54.3''$  E, 12 Dec 2021, B. Rance KF 998/21, cultivated in CHR greenhouse (CHR-674617).

#### *Carex goyenii* Petrie

The CVs of sample and internal standard were 4.18% and 3.83%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Mt. Somers, South Face Track,  $43^{\circ}37'43.9''$  S,  $171^{\circ}24'58.9''$  E, 21 Feb 2024, A. Morales-Alonso & K. Ford 162NZ-AMA24 (CHR, UPOS).

#### *Carex impexa* K.A.Ford

The CVs of sample and internal standard were 4.87% and 4.01%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Tasman Land District, 1000 Acre Plateau, Matiri Valley,  $41^{\circ}36'14.1''$  S,  $172^{\circ}19'37.7''$  E, 07 Feb 2024, A. Morales-Alonso & al. 121NZ-AMA24 (CHR, UPOS).

#### *Carex inopinata* V.J.Cook

The CVs of sample and internal standard were 4.72% and 4.31%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.011$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Castle Hill Basin, Prebble Hill,  $43^{\circ}12'34.1''$  S,  $171^{\circ}45'08.1''$  E, 29 Feb 2024, A. Morales-Alonso & K. Ford 167NZ-AMA24 (CHR, UPOS).

#### *Carex lambertiana* Boott

The CVs of sample and internal standard were 4.61% and 3.19%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.008$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Waikari Reserve, Waikari,  $41^{\circ}24'32.3''$  S,  $173^{\circ}02'22.1''$  E, 09 Feb 2024, A. Morales-Alonso & al. 151NZ-AMA24 (CHR, UPOS).

#### *Carex libera* (Kük.) Hamlin

The CVs of sample and internal standard were 4.84% and 4.67%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Tasman Land District, 1000 Acre Plateau, Matiri Valley,  $41^{\circ}36'14.1''$  S,  $172^{\circ}19'37.7''$  E, 07 Feb 2024, A. Morales-Alonso & al. 123NZ-AMA24 (CHR, UPOS).

#### *Carex litorosa* L.H.Bailey

The CVs of sample and internal standard were 4.55% and 3.85%, respectively, using *Solanum* as standard and GPB.

$2C = 0.93 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Richmond marshaw,  $41^{\circ}17'13.8''$  S,  $173^{\circ}07'36.5''$  E, 08 Feb 2024, A. Morales-Alonso & al. 149NZ-AMA24 (CHR, UPOS).

#### *Carex petriei* Cheeseman

The CVs of sample and internal standard were 3.38% and 2.84%, respectively, using *Solanum* as standard and GPB.

$2C = 0.82 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Otago Land District, Queenstown, Remarkables Ski area,  $45^{\circ}03'06.2''$  S,  $168^{\circ}48'51.2''$  E, 21 Feb 2020, S. Martín-Bravo 212SMB-NZ (UPOS).

#### *Carex cf. petriei*

The CVs of sample and internal standard were 4.80% and 4.63%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.004$  pg, PI FCM. New Zealand, North Island, Manawatū-Whanganui, on the banks of Mangaturuturu River,  $39^{\circ}17'30.8''$  S,  $175^{\circ}30'23.8''$  E, 15 Dec 2017, K. Ford KF 540/17, cultivated in CHR greenhouse (CHR-639451).

#### *Carex raoulii* Boott

The CVs of sample and internal standard were 4.02% and 3.82%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Allendale-Governors Bay Walkway,  $43^{\circ}37'58.7''$  S,  $172^{\circ}39'00.0''$  E, 27 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías 4NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 3.95% and 3.07%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.006$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Allendale-Governors Bay Walkway, 43°37'58.7"S, 172°39'00.0"E, 27 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías 4NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.18% and 3.72%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Allendale-Governors Bay Walkway, 43°37'58.7"S, 172°39'00.0"E, 27 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías 4NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.88% and 4.58%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.005$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Akaroa, forest reserve just east of township, Garden of Tane, 43°48'47.8"S, 172°57'35.6"E, 01 Dec 2019, S. Martín-Bravo & K. Ford KF 686/19, cultivated in CHR greenhouse (CHR-666505).

#### *Carex rubicunda* Petrie

The CVs of sample and internal standard were 4.84% and 4.54%, respectively, using *Solanum* as standard and GPB.

$2C = 0.81 \pm 0.010$  pg, PI FCM. New Zealand, South Island, Southland Land District, Lugar Burn outlet, North Arm, Te Anau, 45°03'16.1"S, 167°43'14.5"E, 12 Mar 2020, K. Ford KF 778/20, cultivated in CHR greenhouse (CHR-667268).

The CVs of sample and internal standard were 4.42% and 3.62%, respectively, using *Solanum* as standard and GPB.

$2C = 0.83 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Spider Lakes, 43°36'24.2"S, 171°07'05.7"E, 21 Feb 2024, A. Morales-Alonso & K. Ford 160NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.95% and 3.02%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Otago Land District, Von Valley, junction of North Branch and South Branch, "3 Tarns", 45°11'48.6"S, 168°18'19.5"E, 20 Feb 2023, K. Ford & al. KF 1144/23, cultivated in CHR greenhouse (CHR).

#### *Carex solandri* Boott

The CVs of sample and internal standard were 5.06% and 4.42%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.006$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Matiri Valley, near Matiri River, 41°39'44.5"S, 172°19'51.0"E, 07 Feb 2024, A. Morales-Alonso & al. 138NZ-AMA24 (CHR, UPOS).

#### *Carex traversii* Kirk

The CVs of sample and internal standard were 4.25% and 3.90%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.006$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Red Hills, Wairau Valley, next to Wairau River, Nelson, 41°44'02.4"S, 172°59'25.7"E, 08 Feb 2024, A. Morales-Alonso & al. 142NZ-AMA24 (CHR, UPOS).

#### *Carex uncifolia* Cheeseman

The CVs of sample and internal standard were 4.78% and 4.09%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Southland Land District, West Dome, 45°33'03.3"S, 168°11'08.9"

E, 29 Jan 2024, A. Morales-Alonso & al. 32NZ-AMA24 (CHR, UPOS).

#### *Carex ventosa* C.B.Clarke

The CVs of sample and internal standard were 3.78% and 3.84%, respectively, using *Solanum* as standard and GPB.

$2C = 1.04 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Chatham Islands, Rekohu, Ocean Bay Mail Scenic Reserve, 43°58'28.0"S, 176°26'21.1"W, 28 Jan 2020, P. de Lange KF 754/20, cultivated in CHR greenhouse (CHR-667248).

#### *Carex wakatipu* Petrie

The CVs of sample and internal standard were 4.07% and 3.61%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.009$  pg, PI FCM. New Zealand, South Island, Otago Land District, Pisa Range, above Lake McKay, 44°50'54.4"S, 169°12'40.9"E, 12 Feb 2020, K. Ford KF 705/20, cultivated in CHR greenhouse (CHR-666520).

#### *Carex sect. Fecundae* Kük.

##### *Carex chordalis* Liebm.

The CVs of sample and internal standard were 3.88% and 3.14%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.03 \pm 0.006$  pg, PI FCM. Ecuador, Pichincha, Laguna de Papallacta, 00°22'27.5"S, 78°09'54.5"W, 05 Aug 2022, A. Morales-Alonso & al. 101ECU-AMA22 (UPOS).

#### *Carex jamesonii* Boott

The CVs of sample and internal standard were 3.72% and 3.12%, respectively, using *Solanum* as standard and OXPRO.

$2C = 0.94 \pm 0.002$  pg, PI FCM. Ecuador, Pichincha, Laguna de Papallacta, 00°22'27.5"S, 78°09'54.5"W, 05 Aug 2022, A. Morales-Alonso & al. 102ECU-AMA22 (UPOS).

#### *Carex lemanniana* Boott

The CVs of sample and internal standard were 3.40% and 3.10%, respectively, using *Solanum* as standard and OXPRO.

$2C = 0.96 \pm 0.003$  pg, PI FCM. Ecuador, Carchi, Reserva Ecológica El Ángel, road to Lagunas Verdes de Chiles Volcano, 00°47'55.4"N, 77°54'59.5"W, 06 Aug 2022, A. Morales-Alonso & al. 115ECU-AMA22 (UPOS).

#### *Carex pichinchensis* Kunth

The CVs of sample and internal standard were 3.90% and 2.93%, respectively, using *Solanum* as standard and OXPRO.

$2C = 0.98 \pm 0.005$  pg, PI FCM. Ecuador, Pichincha, ascent to Cerro Corazón, 00°33'55.1"S, 78°40'08.9"W, 04 Aug 2022, A. Morales-Alonso & al. 90ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 4.15% and 3.39%, respectively, using *Solanum* as standard and OXPRO.

$2C = 0.96 \pm 0.002$  pg, PI FCM. Ecuador, Pichincha, Andean Snipe trail, Yanacocha Biological Reserve, 00°07'06.8"S, 78°35'09.3"W, 10 Aug 2022, A. Morales-Alonso & al. 145ECU-AMA22 (UPOS).

#### *Carex sect. Frigidae* Fr. ex Kük.

##### *Carex frigida* All.

The CVs of sample and internal standard were 4.68% and 4.45%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.069$  pg, PI FCM. Switzerland, Canton of Valais, Bellwald, Spilsee,  $46^{\circ}27'40.0''N$ ,  $08^{\circ}09'52.0''E$ , 20 Aug 2023, R. Sánchez-Villegas & M. Luceño 40RSV23 (UPOS).

The CVs of sample and internal standard were 4.46% and 4.70%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.004$  pg, PI FCM. Switzerland, Canton of Valais, Fieschertal, Märjalensee, trail Märjalen-Stausee,  $46^{\circ}26'23.0''N$ ,  $08^{\circ}05'49.0''E$ , 16 Aug 2023, R. Sánchez-Villegas & M. Luceño 22RSV23 (UPOS).

#### **Carex sect. Graciles Kük.**

*Carex brunnea* Thunb.

The CVs of sample and internal standard were 4.44% and 4.38%, respectively, using *Solanum* as standard and GPB.

$2C = 1.01 \pm 0.005$  pg, PI FCM. China, Zhejiang, Ningbo, Baoguozi,  $29^{\circ}59'22.7''N$ ,  $121^{\circ}31'29.2''E$ , 2022, R.-G. Ren 10, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 4.03% and 2.91%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.005$  pg, PI FCM. China, Zhejiang, Taohua Island,  $29^{\circ}49'12.5''N$ ,  $122^{\circ}17'32.3''E$ , 05 Jun 2023, P. Jiménez-Mejías & al. 98PJM-CN23 (UPOS, ZJFC).

#### **Carex sect. Indicae Mack.**

*Carex amicta* Boott

The CVs of sample and internal standard were 3.68% and 3.37%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.14 \pm 0.004$  pg, PI FCM. Ecuador, Carchi, El Ángel Ecological Reserve, road to Lagunas Verdes de Chiles Volcano,  $00^{\circ}47'18.7''N$ ,  $77^{\circ}53'30.7''W$ , 06 Aug 2022, A. Morales-Alonso & al. 112ECU-AMA22 (UPOS).

*Carex porrecta* Reznicek & Camelb.

The CVs of sample and internal standard were 4.57% and 3.84%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.17 \pm 0.002$  pg, PI FCM. Ecuador, Pichincha, base of Cerro Pan de Azúcar, Pululahua Geobotanical Reserve,  $00^{\circ}03'07.4''N$ ,  $78^{\circ}29'15.4''W$ , 08 Aug 2022, A. Morales-Alonso & al. 129ECU-AMA22 (UPOS).

*Carex porrecta* Reznicek & Camelb. × *Carex polystachya* Sw. ex Wahlenb.

The CVs of sample and internal standard were 4.40% and 4.15%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.14 \pm 0.030$  pg, PI FCM. Ecuador, Pichincha, base of Cerro Pan de Azúcar, Pululahua Geobotanical Reserve,  $00^{\circ}03'07.4''N$ ,  $78^{\circ}29'15.4''W$ , 08 Aug 2022, A. Morales-Alonso & al. 124ECU-AMA22 (UPOS).

*Carex sodiroi* Kük.

The CVs of sample and internal standard were 4.65% and 3.78%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.13 \pm 0.020$  pg, PI FCM. Ecuador, Pichincha, Quito-Gualea road, El Pahuma,  $00^{\circ}01'34.2''N$ ,  $78^{\circ}37'56.8''W$ , 10 Aug 2022, A. Morales-Alonso & al. 135ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 3.66% and 3.45%, respectively, using *Solanum* as standard and LB01.

$2C = 1.18 \pm 0.010$  pg, PI FCM. Ecuador, Pichincha, road to Pululahua Geobotanical Reserve via Moraspungo entrance,  $00^{\circ}02'11.2''N$ ,  $78^{\circ}30'31.7''W$ , 08 Aug 2022, A. Morales-Alonso & al. 121ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 4.74% and 3.31%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.12 \pm 0.002$  pg, PI FCM. Ecuador, Pichincha, base of Cerro Pan de Azúcar, Pululahua Geobotanical Reserve,  $00^{\circ}03'07.4''N$ ,  $78^{\circ}29'15.4''W$ , 08 Aug 2022, A. Morales-Alonso & al. 126ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 2.83% and 2.33%, respectively, using *Solanum* as standard and LB01.

$2C = 1.19 \pm 0.003$  pg, PI FCM. Ecuador, Pichincha, road to Pululahua Geobotanical Reserve via Moraspungo entrance,  $00^{\circ}01'50.4''N$ ,  $78^{\circ}30'27.1''W$ , 08 Aug 2022, A. Morales-Alonso & al. 120ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 3.47% and 2.75%, respectively, using *Petroselinum* as standard and LB01.

$2C = 1.26 \pm 0.002$  pg, PI FCM. Ecuador, Pichincha, road to Pululahua Geobotanical Reserve via Moraspungo entrance,  $00^{\circ}01'50.4''N$ ,  $78^{\circ}30'27.1''W$ , 08 Aug 2022, A. Morales-Alonso & al. 120ECU-AMA22 (UPOS).

#### **Carex sect. Lageniformes (Ohwi) Nelmes**

*Carex taihuensis* S.W.Su & S.M.Xu

The CVs of sample and internal standard were 4.10% and 3.48%, respectively, using *Solanum* as standard and GPB.

$2C = 1.46 \pm 0.012$  pg, PI FCM. China, Anhui, Taihu, Dashan to Shuanghe,  $30^{\circ}25'27.9''N$ ,  $116^{\circ}05'20.9''E$ , 24 Apr 2015, X.-F. Jin & W.-J. Chen 15042417, cultivated in ZJFC herbarium (ZJFC).

#### **Carex sect. Limosae (Heuff.) Meinhsh.**

*Carex magellanica* Lam.

The CVs of sample and internal standard were 4.28% and 3.03%, respectively, using *Solanum* as standard and LB01.

$2C = 1.04 \pm 0.006$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park,  $37^{\circ}48'08.4''S$ ,  $73^{\circ}01'05.2''W$ , 21 Jan 2023, S. Martín-Bravo & al. 31SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.08% and 2.77%, respectively, using *Solanum* as standard and LB01.

$2C = 1.05 \pm 0.003$  pg, PI FCM. Chile, Los Ríos, Corral,  $39^{\circ}56'54.6''S$ ,  $73^{\circ}27'35.1''W$ , 23 Jan 2023, J.I. Márquez-Corro & al. 33JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.11% and 3.19%, respectively, using *Solanum* as standard and GPB.

$2C = 1.02 \pm 0.002$  pg, PI FCM. Chile, Los Lagos, Chiloé, Piuchué Range, San Pedro,  $42^{\circ}19'24.2''S$ ,  $73^{\circ}53'42.3''W$ , 30 Jan 2023, P. Muñoz-Schüller & al. 96.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 2.74% and 2.73%, respectively, using *Solanum* as standard and GPB.

$2C = 1.04 \pm 0.012$  pg, PI FCM. France, Eastern Pyrénées Department, Latour de Carol, Serra Blanca de la Tor, trail to San-Pere de Cedret,  $42^{\circ}27'12.8''N$ ,  $01^{\circ}53'13.5''E$ , 16 Jul 2023, S. Martín-Bravo & al. 76SMB23 (CONC, UPOS).

#### **Carex sect. Longicaules Mack. ex Reznicek**

*Carex pygmaea* Boeckeler

The CVs of sample and internal standard were 4.53% and 3.04%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.01 \pm 0.005$  pg, PI FCM. Ecuador, Pichincha, ascent to Cerro Corazón,  $00^{\circ}34'05.5''S$ ,  $78^{\circ}39'54.0''W$ , 04 Aug 2022, A. Morales-Alonso & al. 93ECU-AMA22 (UPOS).

**Carex sect. Molliculae Ohwi***Carex alopecuroides* D.Don

The CVs of sample and internal standard were 3.08% and 2.43%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.016$  pg, PI FCM. China, Zhejiang, Lin'an, Changhua,  $30^{\circ}10'52.6''N$ ,  $119^{\circ}12'33.5''E$ , 05 May 2016, X.-F. Jin 3621, cultivated in ZJFC herbarium (ZJFC).

*Carex doniana* Spreng.

The CVs of sample and internal standard were 3.55% and 2.71%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.002$  pg, PI FCM. China, Zhejiang, Lin'an, Changhua,  $30^{\circ}14'43.5''N$ ,  $119^{\circ}06'38.2''E$ , 02 May 2008, X.-F. Jin 2021, cultivated in ZJFC herbarium (ZJFC).

*Carex japonica* Thunb.

The CVs of sample and internal standard were 4.13% and 3.15%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.002$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve,  $30^{\circ}20'28.1''N$ ,  $119^{\circ}26'41.5''E$ , 30 May 2023, P. Jiménez-Mejías & al. 28PJM-CN23 (UPOS, ZJFC).

*Carex mollicula* Boott

The CVs of sample and internal standard were 2.71% and 2.64%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 0.8 \pm 0$  pg, PI FCM. Korea, Mountain 18-1 in Wondal-ri, Jukgok-myeon, Gokseong-gun, Jeollanam-do,  $35^{\circ}08'02.1''N$ ,  $127^{\circ}22'04.3''E$ , 17 May 2022, Y. Cho & S. Kim 2022-029 (SWU0054282).

The CVs of sample and internal standard were 4.25% and 2.88%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.002$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve,  $30^{\circ}20'28.1''N$ ,  $119^{\circ}26'41.5''E$ , 30 May 2023, P. Jiménez-Mejías & al. 29PJM-CN23 (UPOS, ZJFC).

**Carex sect. Occlusae C.B.Clarke***Carex borealisfujianica* Y.F.Lu & X.F.Jin

The CVs of sample and internal standard were 4.87% and 3.12%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.014$  pg, PI FCM. China, Zhejiang, Taohua Island,  $29^{\circ}49'12.5''N$ ,  $122^{\circ}17'32.3''E$ , 05 Jun 2023, P. Jiménez-Mejías & al. 94PJM-CN23 (UPOS, ZJFC).

*Carex ligulata* Nees

The CVs of sample and internal standard were 5.06% and 2.72%, respectively, using *Solanum* as standard and GPB.

$2C = 1.08 \pm 0.007$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve,  $30^{\circ}19'25.7''N$ ,  $119^{\circ}26'22.3''E$ , 30 May 2023, P. Jiménez-Mejías & al. 38PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 4.00% and 2.91%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.003$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve,  $30^{\circ}20'28.1''N$ ,  $119^{\circ}26'41.5''E$ , 30 May 2023, P. Jiménez-Mejías & al. 32PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 3.61% and 2.20%, respectively, using *Solanum* as standard and GPB.

$2C = 1.04 \pm 0.003$  pg, PI FCM. China, Zhejiang, Qingyuan, Longgong,  $27^{\circ}29'35.9''N$ ,  $118^{\circ}57'28.3''E$ , 09 May 2017, X.-F. Jin 3958, cultivated in ZJFC herbarium (ZJFC).

*Carex maubertiana* Boott

The CVs of sample and internal standard were 4.86% and 3.07%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.002$  pg, PI FCM. China, Anhui, Qiyunshan,  $29^{\circ}48'30.2''N$ ,  $118^{\circ}02'05.3''E$ , 01 Jun 2023, P. Jiménez-Mejías & al. 61PJM-CN23 (UPOS, ZJFC).

*Carex phyllocephala* T.Koyama

The CVs of sample and internal standard were 4.07% and 3.02%, respectively, using *Solanum* as standard and GPB.

$2C = 0.98 \pm 0.005$  pg, PI FCM. China, Guangdong, Conghua, Lütian,  $23^{\circ}49'22.0''N$ ,  $113^{\circ}57'34.7''E$ , 13 May 2009, S.-H. Jin & al. CH09009, cultivated in ZJFC herbarium (ZJFC).

**Carex sect. Paludosae G.Don in J.C.Loudon***Carex acutiformis* Ehrh.

The CVs of sample and internal standard were 4.39% and 3.10%, respectively, using *Solanum* as standard and GPB.

$2C = 0.97 \pm 0.016$  pg, PI FCM. France, Ariège Department, Artigues, near Noubals reservoir,  $42^{\circ}43'02.9''N$ ,  $02^{\circ}03'21.7''E$ , 17 Jul 2023, S. Martín-Bravo & al. 100SMB23 (UPOS).

The CVs of sample and internal standard were 4.40% and 3.01%, respectively, using *Solanum* as standard and GPB.

$2C = 1.01 \pm 0.004$  pg, PI FCM. Switzerland, Canton of Valais, Täsch, Schalisee,  $46^{\circ}04'47.0''N$ ,  $07^{\circ}46'32.0''E$ , 22 Aug 2023, R. Sánchez-Villegas & M. Luceño 45RSV23 (UPOS).

*Carex brownii* Tuck.

The CVs of sample and internal standard were 4.28% and 3.04%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.010$  pg, PI FCM. China, Zhejiang, Qianqingtang reservoir,  $30^{\circ}17'55.9''N$ ,  $119^{\circ}07'25.0''E$ , 29 May 2023, P. Jiménez-Mejías & al. 14PJM-CN23 (UPOS, ZJFC).

*Carex ischnostachya* Steud.

The CVs of sample and internal standard were 3.83% and 2.53%, respectively, using *Solanum* as standard and GPB.

$2C = 0.93 \pm 0.003$  pg, PI FCM. China, Zhejiang, Hangzhou, Lingyin,  $30^{\circ}14'56.6''N$ ,  $120^{\circ}06'30.3''E$ , 02 May 2001, X.-F. Jin 6991, cultivated in ZJFC herbarium (ZJFC).

*Carex olivacea* Boott

The CVs of sample and internal standard were 4.64% and 3.29%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.002$  pg, PI FCM. China, Zhejiang, Qianqingtang reservoir,  $30^{\circ}17'55.9''N$ ,  $119^{\circ}07'25.0''E$ , 29 May 2023, P. Jiménez-Mejías & al. 18bisPJM-CN23 (UPOS, ZJFC).

*Carex retrofracta* Kük.

The CVs of sample and internal standard were 4.55% and 3.84%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.005$  pg, PI FCM. China, Zhejiang, Hangzhou, Lingyin,  $30^{\circ}14'56.6''N$ ,  $120^{\circ}06'30.3''E$ , 02 May 2001, X.-F. Jin 6989, cultivated in ZJFC herbarium (ZJFC).

*Carex sclerocarpa* Franch.

The CVs of sample and internal standard were 4.29% and 3.40%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.004$  pg, PI FCM. China, Zhejiang, Lin'an, Changua,  $30^{\circ}10'52.6''N$ ,  $119^{\circ}12'33.5''E$ , 05 May 2016, X.-F. Jin 3613, cultivated in ZJFC herbarium (ZJFC).

#### *Carex subtumida* (Kük.) Ohwi

The CVs of sample and internal standard were 4.54% and 3.67%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.008$  pg, PI FCM. China, Zhejiang, Pan'an, Shanghu,  $29^{\circ}09'00.8''N$ ,  $120^{\circ}40'14.3''E$ , 16 May 2016, X.-F. Jin 2870, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 5.67% and 3.05%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.007$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve,  $30^{\circ}20'28.1''N$ ,  $119^{\circ}26'41.5''E$ , 30 May 2023, P. Jiménez-Mejías & al. 31PJM-CN23 (UPOS, ZJFC).

#### *Carex sect. Paniceae* G.Don.

##### *Carex arisanensis* Hayata

The CVs of sample and internal standard were 3.07% and 2.61%, respectively, using *Solanum* as standard and GPB.

$2C = 1.62 \pm 0.002$  pg, PI FCM. China, Zhejiang, Wencheng, Mt. Tongling,  $27^{\circ}49'42.1''N$ ,  $119^{\circ}51'52.3''E$ , 16 Apr 2014, W.-J. Chen & al. 399, cultivated in ZJFC herbarium (ZJFC).

##### *Carex bicolor* Bellardi ex All.

The CVs of sample and internal standard were 4.58% and 4.62%, respectively, using *Solanum* as standard and GPB.

$2C = 1.35 \pm 0.004$  pg, PI FCM. Switzerland, Canton of Valais, Täsch, Schalisee,  $46^{\circ}04'47.0''N$ ,  $07^{\circ}46'32.0''E$ , 22 Aug 2023, R. Sánchez-Villegas & M. Luceño 43RSV23 (UPOS).

##### *Carex filipes* Franch. & Sav.

The CVs of sample and internal standard were 2.85% and 2.88%, respectively, using *Glycine* as standard and Otto I-II buffer.

$2C = 1.44 \pm 0$  pg, PI FCM. South Korea, Mountain 2-1 in Moak-ri, Bulgap-myeon, Yeonggwang-gun, Jeollanam-do,  $35^{\circ}11'46.0''N$ ,  $126^{\circ}33'02.5''E$ , 04 May 2022, Y. Cho & S. Kim 2022-009 (SWU0054266).

#### *Carex sect. Phacocystis* Dumort.

##### *Carex aequialta* Kük.

The CVs of sample and internal standard were 2.88% and 2.89%, respectively, using *Raphanus* as standard and Otto I-II buffer.

$2C = 0.84 \pm 0$  pg, PI FCM. South Korea, Mountain 1-34 in Sinseong-ri, Bukha-myeon, Jangseong-gun, Jeollanam-do,  $35^{\circ}26'36.3''N$ ,  $126^{\circ}50'52.0''E$ , 05 May 2022, Y. Cho & S. Kim 2022-015 (SWU0054269).

##### *Carex aff. coriacea* Hamlin

The CVs of sample and internal standard were 4.51% and 4.70%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Tasman Land District, 1000 Acre Plateau, Matiri Valley,  $41^{\circ}36'14.1''S$ ,  $172^{\circ}19'37.7''E$ , 07 Feb 2024, A. Morales-Alonso & al. 117NZ-AMA24 (CHR, UPOS)

##### *Carex antucensis* Kunze ex Kunth

The CVs of sample and internal standard were 4.40% and 3.66%, respectively, using *Solanum* as standard and LB01.

$2C = 1.00 \pm 0.002$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, road between Aguascalientes valley and the

Termas de Chillán resort, near Paso Pirigallo,  $36^{\circ}54'21.8''S$ ,  $71^{\circ}22'56.3''W$ , 18 Jan 2023, S. Martín-Bravo & al. 16SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.75% and 2.70%, respectively, using *Solanum* as standard and LB01.

$2C = 0.99 \pm 0.013$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, Aguascalientes valley,  $36^{\circ}54'23.5''S$ ,  $71^{\circ}22'30.5''W$ , 18 Jan 2023, S. Martín-Bravo & al. 11SMB23 (CONC, UPOS).

##### *Carex cinerascens* Kük.

The CVs of sample and internal standard were 3.84% and 2.57%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 0.98 \pm 0$  pg, PI FCM. South Korea, 123 Yongdang-ri, Wondong-myeon, Yangsan-si, Gyeongsangnam-do,  $35^{\circ}22'10.4''N$ ,  $128^{\circ}54'49.2''E$ , 24 May 2022, Y. Cho & S. Kim 2022-042 (SWU0054297, SWU0054298).

##### *Carex darwinii* Boott

The CVs of sample and internal standard were 4.17% and 3.05%, respectively, using *Solanum* as standard and LB01.

$2C = 0.93 \pm 0.001$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín, road 181,  $38^{\circ}27'40.2''S$ ,  $71^{\circ}42'23.0''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 14PJM-CL23 (CONC, UPOS).

##### *Carex decidua* Boott

The CVs of sample and internal standard were 4.43% and 3.31%, respectively, using *Solanum* as standard and LB01.

$2C = 0.95 \pm 0.008$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park,  $40^{\circ}46'51.5''S$ ,  $72^{\circ}12'39.6''W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 64JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.69% and 2.11%, respectively, using *Solanum* as standard and GPB.

$2C = 1.01 \pm 0.005$  pg, PI FCM. Chile, Araucanía, Malleco, Paso del Pino Hachado,  $38^{\circ}39'17.5''S$ ,  $70^{\circ}55'14.7''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 24PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 2.96% and 2.20%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.002$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas,  $33^{\circ}19'34.0''S$ ,  $70^{\circ}14'30.2''W$ , 16 Jan 2023, P. Jiménez-Mejías & al. 10PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.93% and 3.53%, respectively, using *Solanum* as standard and GPB.

$2C = 0.94 \pm 0.059$  pg, PI FCM. Chile, Los Lagos, Llanquihue, Lenca, Alerce Andino National Park, ascent to Laguna Triángulo,  $43^{\circ}33'52.6''S$ ,  $72^{\circ}32'17.9''W$ , 28 Jan 2023, P. García-Moro & al. 26pgm23 (CONC, UPOS).

##### *Carex enneastachya* C.B.Clarke

The CVs of sample and internal standard were 4.56% and 3.44%, respectively, using *Solanum* as standard and OXPRO.

$2C = 0.89 \pm 0.011$  pg, PI FCM. Ecuador, Pichincha, lower lagoon, Cayambe-Coca National Park,  $00^{\circ}19'41.7''S$ ,  $78^{\circ}12'02.0''W$ , 04 Aug 2022, A. Morales-Alonso & al. 98ECU-AMA22 (UPOS).

##### *Carex forficula* Franch. & Sav.

The CVs of sample and internal standard were 2.83% and 2.74%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 1 \pm 0.04$  pg, PI FCM. South Korea, Shimjeok Wetland, Inje-gun, Gangwon-do,  $38^{\circ}13'46.5''N$ ,  $128^{\circ}10'09.6''E$ , 28 Jun 2020, Y. Cho & S. Kim 2022-005 (SWU0054333, SWU0054336, SWU0054337).

*Carex gaudichaudiana* Kunth

The CVs of sample and internal standard were 4.48% and 4.33%, respectively, using *Solanum* as standard and GPB.

$2C = 0.98 \pm 0.007$  pg, PI FCM. New Zealand, South Island, West Coast, Westland Land District, Three Mile Track to Okarito Lagoon,  $43^{\circ}13'32.9''S$ ,  $170^{\circ}09'36.6''E$ , 04 Feb 2024, A. Morales-Alonso & P. Jiménez-Mejías 103NZ-AMA24 (CHR, UPOS).

*Carex geminata* Schkuhr

The CVs of sample and internal standard were 4.72% and 4.17%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.007$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Allendale-Governors Bay Walkway,  $43^{\circ}38'16.6''S$ ,  $172^{\circ}38'53.3''E$ , 27 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías 7NZ-AMA24 (CHR, UPOS).

*Carex micrantha* Kük.

The CVs of sample and internal standard were 2.73% and 2.53%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 0.9 \pm 0$  pg, PI FCM. Korea, 123 Yongdang-ri, Wondong-myeon, Yangsan-si, Gyeongsangnam-do,  $35^{\circ}22'10.4''N$ ,  $128^{\circ}54'49.2''E$ , 24 May 2022, Y. Cho & S. Kim 2022-043 (SWU0054299).

*Carex nigra* (L.) Reichard

The CVs of sample and internal standard were 3.98% and 4.02%, respectively, using *Solanum* as standard and GPB.

$2C = 0.97 \pm 0.007$  pg, PI FCM. France, Eastern Pyrénées Department, road from Mont-Louis to La Bollosa reservoir, trail to Estany Largo, Estany del Racó,  $42^{\circ}33'20.3''N$ ,  $02^{\circ}00'33.8''E$ , 17 Jul 2023, S. Martín-Bravo & al. 106SMB23 (UPOS).

The CVs of sample and internal standard were 3.85% and 3.07%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.003$  pg, PI FCM. Switzerland, Canton of Valais, Bellwald, Spilsee,  $46^{\circ}27'40.0''N$ ,  $08^{\circ}09'52.0''E$ , 20 Aug 2023, R. Sánchez-Villegas & M. Luceño 41RSV23 (UPOS).

The CVs of sample and internal standard were 3.59% and 2.81%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.016$  pg, PI FCM. Switzerland, Canton of Valais, Zermatt, Stellisee,  $46^{\circ}00'47.0''N$ ,  $07^{\circ}47'53.0''E$ , 24 Aug 2023, R. Sánchez-Villegas & M. Luceño 58RSV23 (UPOS).

The CVs of sample and internal standard were 3.30% and 2.79%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.007$  pg, PI FCM. Switzerland, Canton of Valais, Fieschertal, Vordersee, trail Märjalen-Stausee,  $46^{\circ}26'35.0''N$ ,  $08^{\circ}06'35.0''E$ , 16 Aug 2023, R. Sánchez-Villegas & M. Luceño 21RSV23 (UPOS).

*Carex otaruensis* Franch.

The CVs of sample and internal standard were 3.22% and 2.64%, respectively, using *Solanum* as standard and GPB.

$2C = 1.08 \pm 0.014$  pg, PI FCM. China, Zhejiang, Qianqingtang reservoir,  $30^{\circ}18'01.7''N$ ,  $119^{\circ}07'04.7''E$ , 29 May 2023, P. Jiménez-Mejías & al. 22PJM-CN23 (UPOS, ZJFC).

*Carex quixotiana* Ben.Benítez, Martín-Bravo, Luceño & Jim.Mejías

The CVs of sample and internal standard were 4.12% and 2.87%, respectively, using *Solanum* as standard and GPB.

$2C = 1.02 \pm 0.003$  pg, PI FCM. Spain, Ciudad Real, Sierra Madrona, Fuencaliente, road to San Isidro campsite,  $38^{\circ}26'56.7''N$ ,  $04^{\circ}$

$19'37.8''W$ , 27 Apr 2013, S. Martín-Bravo & F. García-de-Leániz 3SMB13 (UPOS).

*Carex reuteriana* Boiss. subsp. *reuteriana*

The CVs of sample and internal standard were 3.97% and 3.91%, respectively, using *Solanum* as standard and GPB.

$2C = 1.17 \pm 0.003$  pg, PI FCM. Spain, Ávila, El Barco de Ávila, banks of the Tormes River,  $40^{\circ}20'47.8''N$ ,  $05^{\circ}31'58.7''W$ , 01 Apr 2022, M. Luceño & al. 198ML25 (UPOS).

*Carex suifunensis* Kom.

The CVs of sample and internal standard were 2.68% and 3.91%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 0.96 \pm 0$  pg, PI FCM. South Korea, Mountain 2-3 in Jungsan-dong, Buk-gu, Ulsan,  $35^{\circ}40'09.5''N$ ,  $129^{\circ}22'17.0''E$ , 23 May 2022, Y. Cho & S. Kim 2022-038 (SWU0054292).

***Carex sect. Praelongae* (Kük.) Nelmes***Carex dimorpholepis* Steud.

The CVs of sample and internal standard were 3.40% and 2.52%, respectively, using *Solanum* as standard and GPB.

$2C = 0.78 \pm 0.002$  pg, PI FCM. China, Zhejiang, Ningbo, Hangzhou Bay,  $30^{\circ}21'54.4''N$ ,  $121^{\circ}10'31.1''E$ , 04 Jun 2023, P. Jiménez-Mejías & al. 87PJM-CN23 (UPOS, ZJFC).

***Carex sect. Racemosae* G.Don***Carex atrata* L.

The CVs of sample and internal standard were 4.46% and 3.78%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.004$  pg, PI FCM. Switzerland, Canton of Bern, Grindelwald, Eigergletscher cable car station,  $46^{\circ}34'28.0''N$ ,  $07^{\circ}58'23.0''E$ , 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 39RSV23 (UPOS).

*Carex hartmaniorum* A.Cajander

The CVs of sample and internal standard were 3.73% and 3.36%, respectively, using *Solanum* as standard and GPB.

$2C = 0.84 \pm 0.014$  pg, PI FCM. France, Ariège Department, Artigues, near Noubals reservoir,  $42^{\circ}43'02.9''N$ ,  $02^{\circ}03'21.7''E$ , 17 Jul 2023, S. Martín-Bravo & al. 95SMB23 (UPOS).

The CVs of sample and internal standard were 4.62% and 4.44%, respectively, using *Solanum* as standard and GPB.

$2C = 0.93 \pm 0.004$  pg, PI FCM. France, Eastern Pyrénées Department, Latour de Carol, Serra Blanca de la Tor, trail to San-Pere de Cedret,  $42^{\circ}27'12.8''N$ ,  $01^{\circ}53'13.5''E$ , 16 Jul 2023, S. Martín-Bravo & al. 79SMB23 (UPOS).

*Carex parviflora* Host

The CVs of sample and internal standard were 4.89% and 3.89%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.001$  pg, PI FCM. Switzerland, Canton of Bern, Grindelwald, path from the Eigergletscher cable car station to the Guggi Hütte,  $46^{\circ}34'05.0''N$ ,  $07^{\circ}58'01.0''E$ , 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 35RSV23 (UPOS).

***Carex sect. Rhomboidales* Kük.***Carex basiflora* C.B.Clarke

The CVs of sample and internal standard were 4.40% and 2.53%, respectively, using *Solanum* as standard and GPB.

$2C = 1.02 \pm 0.004$  pg, PI FCM. China, Shaanxi, Meixian, Honghegu,  $34^{\circ}02'00.4''N$ ,  $107^{\circ}45'53.8''E$ , 18 May 2010, X.-F. Jin & W.-J. Chen 2612, cultivated in ZJFC herbarium (ZJFC).

*Carex brevicuspis* C.B.Clarke

The CVs of sample and internal standard were 3.97% and 3.17%, respectively, using *Solanum* as standard and GPB.

$2C = 0.98 \pm 0.007$  pg, PI FCM. China, Zhejiang, Pan'an, Mt. Dapan,  $29^{\circ}00'20.7''N$ ,  $120^{\circ}30'28.8''E$ , 25 Apr 2010, X.-F. Jin 2547, cultivated in ZJFC herbarium (ZJFC).

*Carex chaofangii* C.Z.Zheng & X.F.Jin

The CVs of sample and internal standard were 3.90% and 2.87%, respectively, using *Solanum* as standard and GPB.

$2C = 1.28 \pm 0.013$  pg, PI FCM. China, Zhejiang, Wencheng, Mt. Tongling,  $27^{\circ}49'06.8''N$ ,  $119^{\circ}50'49.7''E$ , 16 Apr 2014, W.-J. Chen 369, cultivated in ZJFC herbarium (ZJFC).

*Carex chinensis* Retz.

The CVs of sample and internal standard were 3.82% and 3.23%, respectively, using *Solanum* as standard and GPB.

$2C = 1.15 \pm 0.009$  pg, PI FCM. China, Zhejiang, Songyang, Yuyan,  $28^{\circ}21'22.0''N$ ,  $119^{\circ}18'16.9''E$ , 22 Apr 2010, X.-F. Jin 2501, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 3.95% and 3.07%, respectively, using *Solanum* as standard and GPB.

$2C = 1.18 \pm 0.002$  pg, PI FCM. China, Anhui, Huangshan,  $30^{\circ}06'45.4''N$ ,  $118^{\circ}10'09.2''E$ , 02 Jun 2023, P. Jiménez-Mejías & al. 76PJM-CN23 (UPOS, ZJFC).

*Carex harlandii* Boott

The CVs of sample and internal standard were 3.88% and 3.76%, respectively, using *Solanum* as standard and GPB.

$2C = 1.29 \pm 0.005$  pg, PI FCM. China, Anhui, Xiuning, Liukou,  $29^{\circ}35'59.5''N$ ,  $118^{\circ}20'23.1''E$ , 27 May 2009, H. Wang 1751, cultivated in ZJFC herbarium (ZJFC).

*Carex huangshanica* X.F.Jin & W.J.Chen

The CVs of sample and internal standard were 4.06% and 3.20%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.003$  pg, PI FCM. China, Anhui, Huangshan,  $30^{\circ}07'21.9''N$ ,  $118^{\circ}10'13.1''E$ , 02 Jun 2023, P. Jiménez-Mejías & al. 70PJM-CN23 (UPOS, ZJFC).

*Carex jiuhuaensis* S.W.Su

The CVs of sample and internal standard were 5.13% and 2.99%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.005$  pg, PI FCM. China, Anhui, Jiuhuashan, Jiuhua Mountain,  $30^{\circ}27'57.9''N$ ,  $117^{\circ}49'01.1''E$ , 03 Jun 2023, P. Jiménez-Mejías & al. 81PJM-CN23 (UPOS, ZJFC).

*Carex manca* Boott

The CVs of sample and internal standard were 4.42% and 3.58%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.007$  pg, PI FCM. China, Zhejiang, Hangzhou, Lingyin,  $30^{\circ}15'00.2''N$ ,  $120^{\circ}06'31.4''E$ , 11 Apr 2003, X.-F. Jin 24, cultivated in ZJFC herbarium (ZJFC).

*Carex radiciflora* Dunn

The CVs of sample and internal standard were 4.34% and 2.72%, respectively, using *Solanum* as standard and GPB.

$2C = 1.19 \pm 0.009$  pg, PI FCM. China, Zhejiang, Suichang, Yanping,  $28^{\circ}22'56.5''N$ ,  $118^{\circ}54'13.4''E$ , 23 Apr 2010, X.-F. Jin & al. 2511, cultivated in ZJFC herbarium (ZJFC).

*Carex simulans* C.B.Clarke

The CVs of sample and internal standard were 3.79% and 2.94%, respectively, using *Solanum* as standard and GPB.

$2C = 1.18 \pm 0.005$  pg, PI FCM. China, Zhejiang, Pan'an, Shanghu,  $29^{\circ}09'00.4''N$ ,  $120^{\circ}40'13.5''E$ , 09 Apr 2011, X.-F. Jin 2650, cultivated in ZJFC herbarium (ZJFC).

*Carex thibetica* Franch.

The CVs of sample and internal standard were 4.08% and 2.99%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.003$  pg, PI FCM. China, Zhejiang, Lin'an, Changhua,  $30^{\circ}10'56.211''N$ ,  $119^{\circ}12'33.502''E$ , May 2016, X.-F. Jin s.n., cultivated in ZJFC herbarium (ZJFC).

*Carex wahuensis* (Franch. & Sav.) T.Koyama

The CVs of sample and internal standard were 4.03% and 3.30%, respectively, using *Solanum* as standard and GPB.

$2C = 0.97 \pm 0.005$  pg, PI FCM. China, Zhejiang, Taohua Island,  $29^{\circ}49'12.5''N$ ,  $122^{\circ}17'32.3''E$ , 05 Jun 2023, P. Jiménez-Mejías & al. 96PJM-CN23 (UPOS, ZJFC).

***Carex sect. Rhynchocystis* Dumort.**

*Carex bequaertii* subsp. *mossii* (Nelmes) Míguez, Martín-Bravo & Jim.Mejías

The CVs of sample and internal standard were 5.65% and 4.14%, respectively, using *Solanum* as standard and GPB.

$2C = 1.00 \pm 0.011$  pg, PI FCM. South Africa, KwaZulu-Natal, Bushman's Nek, Caravan Park,  $29^{\circ}50'37.8''S$ ,  $029^{\circ}12'57.2''E$ , 17 Dec 2008, S. Martín-Bravo, 169SMB08 (UPOS-13908).

*Carex microcarpa* Bertol. ex Moris

The CVs of sample and internal standard were 3.73% and 3.07%, respectively, using *Solanum* as standard and GPB.

$2C = 0.81 \pm 0.002$  pg, PI FCM. France, Corsica, Asco, between Asco and the ski area,  $42^{\circ}25'29.8''N$ ,  $08^{\circ}57'59.5''E$ , 06 May 2007, M. Escudero & M. Luceño 104ME07 (UPOS-4723).

*Carex pendula* Huds.

The CVs of sample and internal standard were 4.72% and 3.07%, respectively, using *Solanum* as standard and LB01.

$2C = 0.94 \pm 0.017$  pg, PI FCM. Chile, Los Ríos, Valdivia, Isla Teja,  $39^{\circ}48'35.0''S$ ,  $73^{\circ}15'27.8''W$ , 23 Jan 2023, P. Muñoz-Schüler & al. 81.PMS.ENE (CONC, UPOS).

***Carex sect. Spirostachyae* Drejer**

*Carex binervis* Sm.

The CVs of sample and internal standard were 3.52% and 2.84%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.001$  pg, PI FCM. Spain, Ávila, La Nava del Barco, track to Puente de la Yunta (start of the trail to Laguna de la Nava),  $40^{\circ}16'45.1''N$ ,  $05^{\circ}33'27.6''W$ , 18 Aug 2023, S. Martín-Bravo 125SMB23 (UPOS).

*Carex campositii* subsp. *tejedensis* R.Sánchez-Villegas,

M.Escudero & Luceño

The CVs of sample and internal standard were 4.68% and 3.49%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.009$  pg, PI FCM. Spain, Málaga, Canillas de Albaida, Arroyo El Nevazo, Sierra de Tejeda, Almijara y Alhama Natural Park,  $36^{\circ}52'55.9''N$ ,  $03^{\circ}57'2.8''W$ , 13 Jun 2021, R. Sánchez-Villegas & al. 65bisRSV21 (UPOS-14126).

***Carex fuscula* d'Urv.**

The CVs of sample and internal standard were 4.51% and 3.30%, respectively, using *Solanum* as standard and LB01.

$2C = 0.84 \pm 0.002$  pg, PI FCM. Chile, Coquimbo, Tulahuén, Río Grande valley, before Cuesta del Toro,  $30^{\circ}57'24.6''S$ ,  $70^{\circ}31'39.1''W$ , 15 Jan 2023, P. Muñoz-Schüler & al. 40.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.83% and 3.83%, respectively, using *Solanum* as standard and LB01.

$2C = 0.81 \pm 0.002$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park,  $37^{\circ}48'07.0''S$ ,  $73^{\circ}01'04.7''W$ , 21 Jan 2023, S. Martín-Bravo & al. 27SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 4.77% and 3.29%, respectively, using *Solanum* as standard and LB01.

$2C = 0.87 \pm 0.006$  pg, PI FCM. Chile, Biobío, Hualpén, Hualpén Peninsula, Terrestrial Biology Station,  $36^{\circ}47'50.0''S$ ,  $73^{\circ}09'30.6''W$ , 04 Jan 2023, P. Muñoz-Schüler & al. 04.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.16% and 3.34%, respectively, using *Solanum* as standard and LB01.

$2C = 0.86 \pm 0.003$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park,  $37^{\circ}48'08.4''S$ ,  $73^{\circ}01'05.2''W$ , 21 Jan 2023, S. Martín-Bravo & al. 30bisSMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.12% and 2.31%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.003$  pg, PI FCM. Chile, Araucanía, Malleco, Lonquimay, Alaska Falls, La Cascada stream,  $38^{\circ}30'16.8''S$ ,  $71^{\circ}24'45.2''W$ , 22 Jan 2023, P. García-Moro & al. 06pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.98% and 2.96%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.002$  pg, PI FCM. Chile, Los Ríos, Corral,  $39^{\circ}56'54.6''S$ ,  $73^{\circ}27'35.1''W$ , 23 Jan 2023, J.I. Márquez-Corro & al. 31JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.10% and 2.80%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.011$  pg, PI FCM. Chile, Los Lagos, Chiloé, Piuchué Range, San Pedro,  $42^{\circ}19'24.2''S$ ,  $73^{\circ}53'42.3''W$ , 30 Jan 2023, P. Muñoz-Schüler & al. 90.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.31% and 2.89%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.010$  pg, PI FCM. Chile, Los Ríos, Corral, ditches next to the Tornagaleones River,  $39^{\circ}56'29.9''S$ ,  $73^{\circ}12'21.7''W$ , 23 Jan 2023, J.I. Márquez-Corro & al. 20JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.36% and 2.45%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.004$  pg, PI FCM. Chile, Biobío, Antuco, Laguna del Laja National Park, Los Barros sector,  $37^{\circ}27'43.8''S$ ,  $71^{\circ}19'07.0''W$ , 20 Jan 2023, P. Muñoz-Schüler & al. 62.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.41% and 2.72%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.002$  pg, PI FCM. Chile, Los Lagos, Chiloé, Puñihuil penguin beach, clifftop trail,  $41^{\circ}55'44.6''S$ ,  $74^{\circ}02'18.5''W$ , 29 Jan 2023, P. Jiménez-Mejías & al. 40PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.98% and 2.35%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.005$  pg, PI FCM. Chile, Biobío, Polcura, Polcura Range, road to Frutillar,  $37^{\circ}16'23.0''S$ ,  $71^{\circ}45'37.1''W$ , 20 Jan 2023, P. Muñoz-Schüler & al. 47.PMS.ENE (CONC, UPOS).

***Carex perraudieriana* (Kük. ex Bornm.) Gay ex Kük.**

The CVs of sample and internal standard were 4.61% and 4.25%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.005$  pg, PI FCM. Spain, Canary Islands, Tenerife, Santa Cruz de Tenerife, Bosque Encantado (La Ensillada),  $28^{\circ}34'08.7''N$ ,  $016^{\circ}10'10.8''W$ , 01 Jan 2023, R. Sánchez-Villegas & al. 7RSV23 (UPOS).

***Carex sect. Strigosae* (Andersson) Christ*****Carex strigosa* Huds.**

The CVs of sample and internal standard were 4.59% and 3.41%, respectively, using *Solanum* as standard and GPB.

$2C = 0.79 \pm 0.006$  pg, PI FCM. Switzerland, Canton of Valais, Zermatt, descent from the base of the Matterhorn to Zermatt via Schwarzsee station,  $45^{\circ}59'27.8''N$ ,  $07^{\circ}42'14.0''E$ , 23 Aug 2023, R. Sánchez-Villegas & M. Luceño 51RSV23 (UPOS).

***Carex sect. Sylvaticae* Rouy*****Carex paui* Sennen**

The CVs of sample and internal standard were 4.43% and 3.25%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.003$  pg, PI FCM. Spain, Barcelona, Turó de Cal Caletre, Tordera, Camí de Sant Andreu,  $41^{\circ}39'00.4''N$ ,  $02^{\circ}39'04.2''E$ , 29 Apr 2023, J. Jurado & M. Luceño 11JJS23 (UPOS).

***Carex sylvatica* Huds.**

The CVs of sample and internal standard were 3.73% and 3.00%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.008$  pg, PI FCM. Switzerland, Canton of Valais, Blatten, trail from Blatten to the Massaweg canyon,  $46^{\circ}21'45.0''N$ ,  $07^{\circ}59'35.0''E$ , 17 Aug 2023, R. Sánchez-Villegas & M. Luceño 28RSV23 (UPOS).

***Conica* Clade*****Carex brevirastata* K.T.Fu**

The CVs of sample and internal standard were 4.32% and 2.72%, respectively, using *Solanum* as standard and GPB.

$2C = 1.13 \pm 0.003$  pg, PI FCM. China, Zhejiang, Suichang, Yanping,  $28^{\circ}22'56.5''N$ ,  $118^{\circ}54'13.4''E$ , 23 Apr 2010, X.-F. Jin & al. 2518, cultivated in ZJFC herbarium (ZJFC).

***Carex dolichostachya* Hayata**

The CVs of sample and internal standard were 4.22% and 2.83%, respectively, using *Solanum* as standard and GPB.

$2C = 1.19 \pm 0.009$  pg, PI FCM. China, Zhejiang, Lin'an, Changhua,  $30^{\circ}18'37.5''N$ ,  $119^{\circ}07'39.1''E$ , 19 May 2008, X.-F. Jin 2107, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 3.44% and 3.25%, respectively, using *Solanum* as standard and GPB.

$2C = 1.33 \pm 0.005$  pg, PI FCM. China, Anhui, Huangshan,  $30^{\circ}06'45.4''N$ ,  $118^{\circ}10'09.2''E$ , 02 Jun 2023, P. Jiménez-Mejías & al. 73PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 4.18% and 2.94%, respectively, using *Solanum* as standard and GPB.

$2C = 1.17 \pm 0.004$  pg, PI FCM. China, Anhui, Qiyunshanzhen, near the cable car station,  $29^{\circ}49'04.9''N$ ,  $118^{\circ}02'19.0''E$ , 01 Jun 2023, P. Jiménez-Mejías & al. 68PJM-CN23 (UPOS, ZJFC).

***Carex duvaliana* Franch. & Sav.**

The CVs of sample and internal standard were 4.02% and 3.44%, respectively, using *Solanum* as standard and GPB.

$2C = 1.03 \pm 0.008$  pg, PI FCM. China, Zhejiang, Lin'an, Changua,  $30^{\circ}06'51.5''N$ ,  $118^{\circ}54'47.9''E$ , 01 May 2007, X.-F. Jin 1748, cultivated in ZJFC herbarium (ZJFC).

#### *Carex kiangsuensis* Kük.

The CVs of sample and internal standard were 3.11% and 2.55%, respectively, using *Solanum* as standard and GPB.

$2C = 1.28 \pm 0.004$  pg, PI FCM. China, Zhejiang, Linhai, Mt. Kuocang,  $28^{\circ}48'50.4''N$ ,  $120^{\circ}56'19.2''E$ , 17 Jun 2022, Y.-F. Lu & X.-F. Jin 323, cultivated in ZJFC herbarium (ZJFC).

#### *Carex pisiformis* Boott

The CVs of sample and internal standard were 4.02% and 3.70%, respectively, using *Solanum* as standard and GPB.

$2C = 1.28 \pm 0.003$  pg, PI FCM. China, Zhejiang, Tiantai, Mt. Huading,  $29^{\circ}15'36.4''N$ ,  $121^{\circ}05'48.9''E$ , 20 Apr 2006, X.-F. Jin 1481, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 4.51% and 3.06%, respectively, using *Solanum* as standard and GPB.

$2C = 1.05 \pm 0.005$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve,  $30^{\circ}20'28.1''N$ ,  $119^{\circ}26'41.5''E$ , 30 May 2023, P. Jiménez-Mejías & al. 34PJM-CN23 (UPOS, ZJFC)

#### *Carex qiyunensis* S.W.Su & S.M.Xu

The CVs of sample and internal standard were 4.46% and 3.27%, respectively, using *Solanum* as standard and GPB.

$2C = 1.05 \pm 0.005$  pg, PI FCM. China, Anhui, Xiuning, Mt. Qiyun,  $29^{\circ}48'58.8''N$ ,  $118^{\circ}02'33.7''E$ , 14 May 2011, X.-F. Jin & al. 2725, cultivated in ZJFC herbarium (ZJFC).

#### *Carex sabynensis* Less. ex Kunth

The CVs of sample and internal standard were 3.23% and 2.36%, respectively, using *Solanum* as standard and GPB.

$2C = 1.19 \pm 0.002$  pg, PI FCM. China, Zhejiang, Lin'an, Changua,  $30^{\circ}18'40.2''N$ ,  $119^{\circ}07'41.2''E$ , 12 May 2017, Y.-F. Lu 59, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 2.78% and 2.78%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 1.16 \pm 0.02$  pg, PI FCM. South Korea, Mountain 17 in Munsu-ri (Nogodan-Banyabong), Toji-myeon, Gurye-gun, Jeollanam-do,  $35^{\circ}17'42.2''N$ ,  $127^{\circ}32'19.2''E$ , 22 Jun 2022, Y. Cho & S. Kim 2022-063 (SWU0054324).

#### *Carex sociata* Boott

The CVs of sample and internal standard were 4.50% and 3.44%, respectively, using *Solanum* as standard and GPB.

$2C = 1.19 \pm 0.008$  pg, PI FCM. China, Zhejiang, Suichang,  $28^{\circ}36'21.2''N$ ,  $119^{\circ}16'42.2''E$ , 05 May 2017, X.-F. Jin 3903, cultivated in ZJFC herbarium (ZJFC).

#### *Carex tianmushanica* C.Z.Zheng & X.F.Jin

The CVs of sample and internal standard were 4.55% and 3.14%, respectively, using *Solanum* as standard and GPB.

$2C = 1.33 \pm 0.007$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve,  $30^{\circ}20'28.1''N$ ,  $119^{\circ}26'41.5''E$ , 30 May 2023, P. Jiménez-Mejías & al. 35PJM-CN23 (UPOS, ZJFC).

#### *Carex tosaensis* Akiyama

The CVs of sample and internal standard were 4.33% and 3.68%, respectively, using *Solanum* as standard and GPB.

$2C = 1.34 \pm 0.002$  pg, PI FCM. China, Anhui, Huangshan,  $30^{\circ}07'21.9''N$ ,  $118^{\circ}10'13.1''E$ , 02 Jun 2023, P. Jiménez-Mejías & al. 72PJM-CN23 (UPOS, ZJFC).

#### **Flacca Clade**

##### *Carex banksii* Boott

The CVs of sample and internal standard were 5.07% and 3.44%, respectively, using *Solanum* as standard and LB01.

$2C = 1.49 \pm 0.018$  pg, PI FCM. Chile, Biobío, Antuco, Lake in Laja National Park,  $37^{\circ}25'30.5''S$ ,  $72^{\circ}04'34.5''W$ , 20 Jan 2023, M. Sanz-Arnal & al. 15MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.64% and 2.20%, respectively, using *Solanum* as standard and GPB.

$2C = 1.43 \pm 0.003$  pg, PI FCM. Chile, Ñuble, Termas de Chillán, Aguas Calientes Valley,  $36^{\circ}54'08.1''S$ ,  $71^{\circ}22'37.8''W$ , 18 Jan 2023, S. Martín-Bravo & al. 65SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 4.38% and 2.14%, respectively, using *Solanum* as standard and GPB.

$2C = 1.44 \pm 0.004$  pg, PI FCM. Chile, Araucanía, Malleco, Pino Hachado,  $38^{\circ}39'17.5''S$ ,  $70^{\circ}55'14.7''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 23PJM-CL23 (CONC, UPOS).

##### *Carex banksii* var. *odontolepis* (Phil.) Kük.

The CVs of sample and internal standard were 2.55% and 3.47%, respectively, using *Solanum* as standard and LB01.

$2C = 2.70 \pm 0.002$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park, recreation area by the Purén River,  $37^{\circ}49'42.0''S$ ,  $73^{\circ}00'37.4''W$ , 22 Jan 2023, S. Martín-Bravo & al. 52SMB23 (CONC, UPOS).

#### *Carex ferruginea* Scop.

The CVs of sample and internal standard were 4.77% and 3.99%, respectively, using *Solanum* as standard and GPB.

$2C = 1.41 \pm 0.005$  pg PI FCM. Switzerland, Canton of Bern, Grindelwald, path from the Eigergletscher cable car station to the Guggi Hütte,  $46^{\circ}34'02.0''N$ ,  $07^{\circ}58'00.0''E$ , 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 38RSV23 (UPOS).

#### *Carex firma* Host

The CVs of sample and internal standard were 3.59% and 3.60%, respectively, using *Solanum* as standard and GPB.

$2C = 2.49 \pm 0.006$  pg PI FCM. Switzerland, Canton of Bern, Grindelwald, path from the Eigergletscher cable car station to the Guggi Hütte,  $46^{\circ}34'05.0''N$ ,  $07^{\circ}58'01.0''E$ , 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 37RSV23 (UPOS).

#### *Carex flacca* Schreb.

The CVs of sample and internal standard were 3.30% and 2.85%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.011$  pg PI FCM. Spain, Ávila, Solana de Ávila, ascent to Laguna del Duque from the Central del Chorro,  $40^{\circ}18'19.6''N$ ,  $05^{\circ}40'46.4''W$ , 19 Aug 2023, S. Martín-Bravo & A. Rodríguez Saéz 126SMB23 (UPOS).

#### *Carex sempervirens* Vill.

The CVs of sample and internal standard were 2.14% and 2.59%, respectively, using *Oryza* as standard and GPB.

$2C = 2.25 \pm 0.009$  pg PI FCM. Switzerland, Canton of Bern, Grindelwald, Eigergletscher cable car station,  $46^{\circ}34'38.0''N$ ,  $07^{\circ}58'23.0''E$ , 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 31RSV23 (UPOS).

## Hirta Clade

### *Carex aematorhyncha* Desv.

The CVs of sample and internal standard were 4.02% and 3.46%, respectively, using *Solanum* as standard and LB01.

$2C = 0.84 \pm 0.002$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park,  $37^{\circ}48'08.4''S$ ,  $73^{\circ}01'05.2''W$ , 21 Jan 2023, S. Martín-Bravo & al. 32SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 4.10% and 2.15%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.012$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín, route 181,  $38^{\circ}27'40.2''S$ ,  $71^{\circ}42'23.0''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 15PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 4.08% and 4.09%, respectively, using *Solanum* as standard and GPB.

$2C = 0.83 \pm 0.009$  pg, PI FCM. Chile, Los Lagos, Chiloé, road to Playa Mar Brava, Pudeyi River,  $41^{\circ}55'04.6''S$ ,  $73^{\circ}59'45.3''W$ , 29 Jan 2023, P. Jiménez-Mejías & al. 43PJM-CL23 (CONC, UPOS).

### *Carex chilensis* Brongn.

The CVs of sample and internal standard were 3.96% and 3.46%, respectively, using *Solanum* as standard and LB01.

$2C = 0.88 \pm 0.004$  pg, PI FCM. Chile, Los Ríos, Pelchuquín, Cudico River,  $39^{\circ}38'38.2''S$ ,  $73^{\circ}07'31.7''E$ , 23 Jan 2023, P. Muñoz-Schüller & al. 68.PMS.ENE (CONC, UPOS).

### *Carex excelsa* Poepp. ex Kunth

The CVs of sample and internal standard were 4.44% and 3.54%, respectively, using *Solanum* as standard and LB01.

$2C = 0.87 \pm 0.008$  pg, PI FCM. Chile, Coquimbo, Tulahuén, Río Grande valley, before Cuesta del Toro,  $30^{\circ}57'23.1''S$ ,  $70^{\circ}31'29.8''W$ , 15 Jan 2023, P. Muñoz-Schüller & al. 36.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.29% and 3.14%, respectively, using *Solanum* as standard and LB01.

$2C = 0.79 \pm 0.012$  pg, PI FCM. Chile, Coquimbo, Tulahuén, Río Grande valley, beyond Cuesta del Toro,  $30^{\circ}57'37.6''S$ ,  $70^{\circ}31'20.7''W$ , 15 Jan 2023, P. Muñoz-Schüller & al. 33.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.62% and 3.42%, respectively, using *Solanum* as standard and LB01.

$2C = 0.88 \pm 0.008$  pg, PI FCM. Chile, Los Ríos, Río Bueno, road from Crucero to Entre Lagos,  $40^{\circ}35'35.0''S$ ,  $72^{\circ}38'34.8''W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 40JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.70% and 2.96%, respectively, using *Solanum* as standard and GPB.

$2C = 0.83 \pm 0.006$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín, route 181,  $38^{\circ}27'40.2''S$ ,  $71^{\circ}42'23.0''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 16PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.57% and 2.29%, respectively, using *Solanum* as standard and GPB.

$2C = 0.76 \pm 0.004$  pg, PI FCM. Chile, Biobío, Polcura, road from Polcura to San Antonio,  $37^{\circ}16'53.4''S$ ,  $71^{\circ}43'18.0''W$ , 20 Jan 2023, M. Sanz-Arnal & al. 01MSA-CL23 (CONC, UPOS).

### *Carex hirta* L.

The CVs of sample and internal standard were 4.56% and 3.87%, respectively, using *Solanum* as standard and GPB.

$2C = 0.78 \pm 0.003$  pg, PI FCM. France, Eastern Pyrénées Department, Latour de Carol, Serra Blanca de la Tor, trail to San-Pere de Cedret,  $42^{\circ}27'12.8''N$ ,  $01^{\circ}53'13.5''E$ , 16 Jul 2023, S. Martín-Bravo & al. 78SMB23 (UPOS).

The CVs of sample and internal standard were 4.79% and 4.67%, respectively, using *Solanum* as standard and GPB.

$2C = 0.76 \pm 0.007$  pg, PI FCM. Switzerland, Canton of Valais, Täsch, Schalisee,  $46^{\circ}04'47.0''N$ ,  $07^{\circ}46'32.0''E$ , 22 Aug 2023, R. Sánchez-Villegas & M. Luceño 44RSV23 (UPOS).

### *Carex hookeri* Kunth

The CVs of sample and internal standard were 4.69% and 3.36%, respectively, using *Solanum* as standard and LB01.

$2C = 0.91 \pm 0.034$  pg, PI FCM. Chile, Los Lagos, Chiloé, road to Playa Mar Brava, Pudeyi River,  $41^{\circ}55'04.6''S$ ,  $73^{\circ}59'45.3''W$ , 29 Jan 2023, P. Jiménez-Mejías & al. 42PJM-CL23 (CONC, UPOS).

### *Carex maorica* Hamlin

The CVs of sample and internal standard were 4.42% and 4.82%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Matiri Valley, near Matiri River,  $41^{\circ}39'44.5''S$ ,  $172^{\circ}19'51.0''E$ , 07 Feb 2024, A. Morales-Alonso & al. 139NZ-AMA24 (CHR, UPOS).

### *Carex multispicata* Kunze ex Kunth

The CVs of sample and internal standard were 4.84% and 3.79%, respectively, using *Solanum* as standard and LB01.

$2C = 0.95 \pm 0.011$  pg, PI FCM. Chile, Biobío, Polcura, road from Polcura to San Antonio,  $37^{\circ}13'21.9''S$ ,  $71^{\circ}41'20.4''W$ , 20 Jan 2023, M. Sanz-Arnal & al. 08MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.96% and 2.32%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.004$  pg, PI FCM. Chile, Los Lagos, Alerce Andino National Park, Sargazo sector, road to Laguna Sargazo,  $41^{\circ}30'58.3''S$ ,  $72^{\circ}36'16.9''W$ , 28 Jan 2023, M. Sanz-Arnal & al. 32MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.70% and 3.34%, respectively, using *Solanum* as standard and GPB.

$2C = 0.81 \pm 0.002$  pg, PI FCM. Chile, Los Ríos, Corral,  $39^{\circ}55'12.2''S$ ,  $73^{\circ}15'00.8''W$ , 23 Jan 2023, J.I. Márquez-Corro & al. 22JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.53% and 2.79%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.008$  pg, PI FCM. Chile, Los Ríos, Valdivia, Chaihuín, Alerce Costero National Park, road to Gayana Ecolodge, Chaihuque stream,  $39^{\circ}57'35.1''S$ ,  $73^{\circ}32'02.8''W$ , 24 Jan 2023, P. García-Moro & al. 14pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.71% and 2.41%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.012$  pg, PI FCM. Chile, Los Ríos, Río Bueno, road from Crucero to Entre Lagos,  $40^{\circ}35'37.1''S$ ,  $72^{\circ}38'33.8''W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 39JMC23 (CONC, UPOS).

### *Carex pseudocyperus* L.

The CVs of sample and internal standard were 6.38% and 3.44%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.012$  pg, PI FCM. Spain, Cáceres, Talayuela, Tiétar River,  $40^{\circ}01'21.0''N$ ,  $05^{\circ}36'43.0''W$ , 01 Oct 2005, R. Sánchez-Villegas & al. 934RSV18 (UPOS-0718).

### *Carex pumila* Thunb.

The CVs of sample and internal standard were 4.74% and 2.71%, respectively, using *Solanum* as standard and LB01.

$2C = 0.88 \pm 0.011$  pg, PI FCM. Chile, Los Ríos, Valdivia, Chaihuín, beach by the Chaihuín River,  $39^{\circ}57'07.1"S, 73^{\circ}34'52.4"W$ , 24 Jan 2023, P. García-Moro & al. 18pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 5.78% and 4.16%, respectively, using *Solanum* as standard and LB01.

$2C = 0.93 \pm 0.012$  pg, PI FCM. Chile, Los Lagos, Chiloé, Playa Mar Brava,  $41^{\circ}53'00.6"S, 73^{\circ}59'41.3"W$ , 29 Jan 2023, P. Jiménez-Mejías & al. 39PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 4.40% and 3.45%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.003$  pg, PI FCM. China, Zhejiang, Taohua Island,  $29^{\circ}49'12.5"N, 122^{\circ}17'32.3"E$ , 05 Jun 2023, P. Jiménez-Mejías & al. 91PJM-CN23 (UPOS, ZJFC).

#### *Carex rostrata* Stokes

The CVs of sample and internal standard were 4.49% and 3.66%, respectively, using *Solanum* as standard and GPB.  $2C = 0.87 \pm 0.003$  pg, PI FCM. Switzerland, Canton of Valais, Fieschertal, Vordersee, trail Märjalen-Stausee,  $46^{\circ}26'35.0"N, 008^{\circ}06'35.0"E$ , 16 Aug 2023, R. Sánchez-Villegas & M. Luceño 20RSV23 (UPOS).

#### *Carex scabrifolia* Steud.

The CVs of sample and internal standard were 4.28% and 2.47%, respectively, using *Solanum* as standard and GPB.

$2C = 0.81 \pm 0.003$  pg, PI FCM. China, Zhejiang, Ningbo, Hangzhou Bay,  $30^{\circ}21'54.4"N, 121^{\circ}10'31.1"E$ , 04 Jun 2023, P. Jiménez-Mejías & al. 89PJM-CN23 (UPOS, ZJFC).

#### *Carex tristicha* Boott

The CVs of sample and internal standard were 3.69% and 3.12%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.04 \pm 0.068$  pg, PI FCM. Ecuador, Carchi, El Ángel Ecological Reserve, road to Lagunas Verdes of Chiles Volcano,  $00^{\circ}47'45.2"N, 77^{\circ}52'29.9"W$ , 06 Aug 2022, A. Morales-Alonso & al. 109ECU-AMA22 (UPOS).

#### *Carex vesicaria* L.

The CVs of sample and internal standard were 3.61% and 2.98%, respectively, using *Solanum* as standard and GPB.

$2C = 0.94 \pm 0.001$  pg, PI FCM. Switzerland, Canton of Valais, Blatten, trail from Blatten to the Massaweg canyon,  $46^{\circ}21'45.0"N, 07^{\circ}59'35.0"E$ , 17 Aug 2023, R. Sánchez-Villegas & M. Luceño 30RSV23 (UPOS).

The CVs of sample and internal standard were 3.86% and 2.94%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.004$  pg, PI FCM. Spain, Ávila, El Barco de Ávila, Tormes River, upstream from the confluence with the Aravalle River,  $40^{\circ}20'48.4"N, 05^{\circ}31'59.4"W$ , 20 Aug 2023, S. Martín-Bravo & A. Rodríguez Saéz 128SMB23 (UPOS).

#### *Carex werdermannii* L. Gross

The CVs of sample and internal standard were 4.63% and 3.95%, respectively, using *Solanum* as standard and LB01.

$2C = 0.87 \pm 0.002$  pg, PI FCM. Chile, Los Ríos, Cordillera Pelada, Alerce Costero National Park,  $40^{\circ}10'04.7"S, 73^{\circ}30'28.9"W$ , 01 Feb 2023, J.I. Márquez-Corro & al. 67JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.73% and 3.44%, respectively, using *Solanum* as standard and LB01.

$2C = 0.90 \pm 0.002$  pg, PI FCM. Chile, Los Ríos, Corral,  $39^{\circ}56'54.6"S, 73^{\circ}27'35.1"W$ , 23 Jan 2023, J.I. Márquez-Corro & al. 30JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.18% and 2.35%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.002$  pg, PI FCM. Chile, Los Ríos, Cordillera Pelada, Alerce Costero National Park,  $40^{\circ}09'56.9"S, 73^{\circ}30'18.1"W$ , 01 Feb 2023, J.I. Márquez-Corro & al. 73JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.12% and 2.89%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.002$  pg, PI FCM. Chile, Los Lagos, Chiloé, Piuchué Range, San Pedro,  $42^{\circ}19'24.2"S, 73^{\circ}53'42.3"W$ , 30 Jan 2023, P. Muñoz-Schüler & al. 89.PMS.ENE (CONC, UPOS).

#### *Mitrata* Clade

##### *Carex breviculmis* R.Br.

The CVs of sample and internal standard were 2.91% and 2.25%, respectively, using *Solanum* as standard and GPB.

$2C = 1.04 \pm 0.019$  pg, PI FCM. China, Zhejiang, Taohua Island,  $29^{\circ}49'12.5"N, 122^{\circ}17'32.3"E$ , 05 Jun 2023, P. Jiménez-Mejías & al. 101PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 4.16% and 3.11%, respectively, using *Solanum* as standard and GPB.

$2C = 1.03 \pm 0.002$  pg, PI FCM. China, Zhejiang, Suichang,  $28^{\circ}36'21.2"N, 119^{\circ}16'42.2"E$ , 05 May 2017, X.-F. Jin 3902, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 4.74% and 4.09%, respectively, using *Solanum* as standard and GPB.

$2C = 1.05 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Red Hills, Wairau Valley, next to Wairau River, Nelson,  $41^{\circ}44'02.4"S, 172^{\circ}59'25.7"E$ , 08 Feb 2024, A. Morales-Alonso & al. 146NZ-AMA24 (CHR, UPOS).

##### *Carex depressa* subsp. *basilaris* (Jord.) Cif. & Giacom.

The CVs of sample and internal standard were 4.08% and 3.83%, respectively, using *Solanum* as standard and GPB.

$2C = 1.31 \pm 0.002$  pg, PI FCM. Spain, Barcelona, Tordera, Turo d'en buc de les Nogueres,  $41^{\circ}39'29.4"N, 02^{\circ}39'46.2"E$ , 29 Apr 2023, J. Jurado & M. Luceño 12JJS23 (UPOS).

##### *Carex mitrata* var. *aristata* Ohwi

The CVs of sample and internal standard were 3.77% and 2.97%, respectively, using *Solanum* as standard and GPB.

$2C = 0.97 \pm 0.000$  pg, PI FCM. China, Zhejiang, Jiande, Meicheng,  $29^{\circ}33'03.5"N, 119^{\circ}30'38.4"E$ , 11 Apr 2018, X.-F. Jin & Y.-F. Lu s.n., cultivated in ZJFC herbarium (ZJFC).

##### *Carex mitrata* Franch. var. *mitrata*

The CVs of sample and internal standard were 4.25% and 3.32%, respectively, using *Solanum* as standard and GPB.

$2C = 1.01 \pm 0.006$  pg, PI FCM. China, Zhejiang, Road to Qianqingtang,  $30^{\circ}18'23.4"N, 119^{\circ}06'13.4"E$ , 29 May 2023, P. Jiménez-Mejías & al. 4PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 4.35% and 3.15%, respectively, using *Solanum* as standard and GPB.

$2C = 1.05 \pm 0.005$  pg, PI FCM. China, Zhejiang, Taohua Island,  $29^{\circ}49'12.5"N, 122^{\circ}17'32.3"E$ , 05 Jun 2023, P. Jiménez-Mejías & al. 97PJM-CN23 (UPOS, ZJFC).

***Carex truncatirostris* S.W.Su & S.M.Xu**

The CVs of sample and internal standard were 3.74% and 2.99%, respectively, using *Solanum* as standard and GPB.

$2C = 1.03 \pm 0.009$  pg, PI FCM. China, Zhejiang, Pan'an, Molin, 29°03'13.9"N, 120°32'52.0"E, 18 Apr 2011, X.-F. Jin 2674, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 3.81% and 2.58%, respectively, using *Solanum* as standard and GPB.

$2C = 1.04 \pm 0.004$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve, 30°20'28.1"N, 119°26'41.5"E, 30 May 2023, P. Jiménez-Mejías & al. 33PJM-CN23 (UPOS, ZJFC).

***Carex tsushimensis* (Ohwi) Ohwi**

The CVs of sample and internal standard were 2.57% and 2.63%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 1.14 \pm 0$  pg, PI FCM. South Korea, 26 Chang Yuri, Jodo-myeon, Jindo-gun, Jeollanam-do, 34°18'28.5"N, 126°04'59.9"E, 01 Jun 2022, Y. Cho & S. Kim 2022-050 (SWU0054305, SWU 0054306).

***Carex umbrosa* Host**

The CVs of sample and internal standard were 4.07% and 3.41%, respectively, using *Solanum* as standard and GPB.

$2C = 1.19 \pm 0.014$  pg, PI FCM. France, Eastern Pyrénées Department, Latour de Carol, Serra Blanca de la Tor, road to San-Pere de Cedret, 42°27'11.5"N, 01°53'19.2"E, 16 Jul 2023, S. Martín-Bravo & al. 80SMB23 (UPOS).

***Tristachya* Clade*****Carex tristachya* var. *pocilliformis* (Boott) Kük.**

The CVs of sample and internal standard were 3.04% and 2.30%, respectively, using *Solanum* as standard and GPB.

$2C = 1.13 \pm 0.001$  pg, PI FCM. China, Zhejiang, Ningbo, Hangzhou Bay, 30°21'54.4"N, 121°10'31.1"E, 04 Jun 2023, P. Jiménez-Mejías & al. 90PJM-CN23 (UPOS, ZJFC).

***Carex tristachya* Thunb. var. *tristachya***

The CVs of sample and internal standard were 5.92% and 2.50%, respectively, using *Solanum* as standard and GPB.

$2C = 1.20 \pm 0.013$  pg, PI FCM. China, Zhejiang, Taohua Island, 29°49'12.5"N, 122°17'32.3"E, 05 Jun 2023, P. Jiménez-Mejías & al. 95PJM-CN23 (UPOS, ZJFC).

***Incertae Sedis******Carex brevispicula* G.H.Nam & G.Y.Chung**

The CVs of sample and internal standard were 2.69% and 2.63%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 0.96 \pm 0$  pg, PI FCM. Korea, Mt. 18-1 Wondal-ri, Jukgok-myeon, Gokseong-gun, Jeollanam-do, 35°08'01.5"N, 127°22'14.2"E, 20 Apr 2022, Y. Cho & S. Kim 2202-007 (SWU0054251).

***Carex oxyphylla* Franch.**

The CVs of sample and internal standard were 4.13% and 3.09%, respectively, using *Solanum* as standard and GPB.

$2C = 0.93 \pm 0.004$  pg, PI FCM. China, Anhui, Huangshan, 30°06'45.4"N, 118°10'09.2"E, 02 Jun 2023, P. Jiménez-Mejías & al. 74PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 4.30% and 2.38%, respectively, using *Solanum* as standard and GPB.

$2C = 1.11 \pm 0.009$  pg, PI FCM. China, Zhejiang, Taohua Island, 29°49'12.5"N, 122°17'32.3"E, 05 Jun 2023, P. Jiménez-Mejías & al. 99PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 4.28% and 3.48%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.009$  pg, PI FCM. China, Anhui, Huangshan, 30°07'21.9"N, 118°10'13.1"E, 02 Jun 2023, P. Jiménez-Mejías & al. 79PJM-CN23 (UPOS, ZJFC).

**II. *Carex* subg. *Euthyceras* Peterm.*****Kobresia* Clade*****Carex myosuroides* Vill.**

The CVs of sample and internal standard were 4.73% and 4.55%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.003$  pg, PI FCM. Switzerland, Canton of Valais, Battmeralp, road VA-R95, 46°26'10.0"N, 008°05'09.0"E, 16 Aug 2023, R. Sánchez-Villegas & M. Luceño 26RSV23 (UPOS).

***Carex simpliciuscula* Wahlenb.**

The CVs of sample and internal standard were 4.47% and 3.07%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.002$  pg, PI FCM. Switzerland, Canton of Bern, Grindelwald, path from the Eigergletscher cable car station to the Guggi Hütte, 46°34'05.0"N, 07°58'01.0"E, 19 Aug 2023, R. Sánchez-Villegas & M. Luceño 36RSV23 (UPOS).

***Pauciflora* Clade*****Carex pauciflora* Lightf.**

The CVs of sample and internal standard were 3.81% and 2.95%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.001$  pg, PI FCM. Switzerland, Canton of Valais, Zermatt, Matterhorn glacier, 45°59'17.0"N, 07°04'55.0"E, 23 Aug 2023, R. Sánchez-Villegas & M. Luceño 48RSV23 (UPOS).

***Rara* Clade*****Carex capillacea* Boott**

The CVs of sample and internal standard were 4.67% and 3.38%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Southland Land District, Oreti-Mavora QEII Covenant, Mt Nicholas Road, 45°19'53.5"S, 168°12'01.7"E, 21 Feb 2023, K. Ford & B. Rance KF1149/23 (CHR, UPOS)

***Carex uda* Maxim.**

The CVs of sample and internal standard were 2.77% and 2.52%, respectively, using *Solanum* as standard and Otto I-II buffer.

$2C = 0.84 \pm 0$  pg, PI FCM. South Korea, Seonjaryeong, Daegwallyeong Maru-gil, Daegwallyeong-myeon, Pyeongchang-gun, Gangwon-do, 37°41'26.8"N, 128°45'26.7"E, 29 Jun 2022, Y. Cho & S. Kim 2022-012 (SWU0054346).

**III. *Carex* subg. *Psyllophorae* (Degl.) Peterm.*****Carex* sect. *Junciformes* Boeck*****Carex acicularis* Boott**

The CVs of sample and internal standard were 4.72% and 4.40%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Ohau Ski Field, 44°13'23.1"S, 169°46'28.8"E, 01 Feb 2024, A. Morales-Alonso & al. 74NZ-AMA24 (CHR, UPOS).

*Carex cf. acicularis* Boott

The CVs of sample and internal standard were 4.85% and 4.17%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.020$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Craigieburn Range, below Mount Cockayne,  $43^{\circ}09'14.5''S$ ,  $171^{\circ}39'42.6''E$ , 02 May 2017, K. Ford & A. Shanks KF502, cultivated in CHR greenhouse (CHR-638464).

*Carex andina* Phil.

The CVs of sample and internal standard were 4.71% and 2.37%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.004$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, Aguascalientes Valley,  $36^{\circ}54'27.2''S$ ,  $71^{\circ}22'21.9''W$ , 18 Jan 2023, S. Martín-Bravo & al. 01SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 4.74% and 2.99%, respectively, using *Solanum* as standard and LB01.

$2C = 0.83 \pm 0.011$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, Aguascalientes Valley,  $36^{\circ}54'06.0''S$ ,  $71^{\circ}22'38.6''W$ , 18 Jan 2023, S. Martín-Bravo & al. 03SMB23 (CONC, UPOS).

*Carex aphylla* Kunth

The CVs of sample and internal standard were 4.58% and 3.06%, respectively, using *Solanum* as standard and LB01.

$2C = 1.03 \pm 0.008$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park, Piedra del Águila viewpoint,  $37^{\circ}49'30.4''S$ ,  $73^{\circ}02'03.4''W$ , 21 Jan 2023, S. Martín-Bravo & al. 40SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.12% and 2.41%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.001$  pg, PI FCM. Chile, Araucanía, Malleco, Lonquimay, Alaska waterfall, La Cascada stream,  $38^{\circ}30'16.8''S$ ,  $71^{\circ}24'45.2''W$ , 22 Jan 2023, P. García-Moro & al. 08pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.82% and 3.38%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.003$  pg, PI FCM. Chile, Araucanía, Malleco, Pino Hachado, slopes immediately south of the international pass,  $38^{\circ}39'49.5''S$ ,  $70^{\circ}53'57.7''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 20PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 4.45% and 3.37%, respectively, using *Solanum* as standard and GPB.

$2C = 0.94 \pm 0.012$  pg, PI FCM. Chile, Ñuble, Chillán, between Chillán and Termas de Chillán, Las Trancas Valley, near Renegado stream,  $36^{\circ}55'00.1''S$ ,  $71^{\circ}27'11.8''W$ , 18 Jan 2023, S. Martín-Bravo & al. 21SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.72% and 2.94%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.003$  pg, PI FCM. Chile, Ñuble, Chillán, between Chillán and Termas de Chillán, Las Trancas Valley,  $36^{\circ}54'54.2''S$ ,  $71^{\circ}29'36.4''W$ , 18 Jan 2023, S. Martín-Bravo & al. 20SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.73% and 2.23%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.011$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín (between Lonquimay and Curacautín), Malalcahuello National Reserve, slope of the volcano (end of trail),  $38^{\circ}24'50.4''S$ ,  $71^{\circ}32'18.8''W$ , 22 Jan 2023, P. García-Moro & al. 11pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.48% and 2.50%, respectively, using *Solanum* as standard and GPB.

$2C = 0.94 \pm 0.004$  pg, PI FCM. Chile, Biobío, Antuco, Laguna del Laja National Park, Antuco volcano lava flow, northeast position,  $37^{\circ}28'00.2''S$ ,  $71^{\circ}19'07.1''W$ , 20 Jan 2023, M. Sanz-Arnal & al. 12MSA-CL23 (CONC, UPOS).

*Carex argentina* Barros

The CVs of sample and internal standard were 4.51% and 4.20%, respectively, using *Solanum* as standard and LB01.

$2C = 0.74 \pm 0.002$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas,  $33^{\circ}19'40.5''S$ ,  $70^{\circ}14'54.6''W$ , 16 Jan 2023, P. Jiménez-Mejías & al. 01PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 4.55% and 3.07%, respectively, using *Solanum* as standard and LB01.

$2C = 0.86 \pm 0.013$  pg, PI FCM. Chile, Araucanía, Malleco, Pino Hachado, slopes immediately south of the international pass,  $38^{\circ}39'49.5''S$ ,  $70^{\circ}53'57.7''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 21PJM-CL23 (CONC, UPOS).

*Carex boelckeiana* Barros

The CVs of sample and internal standard were 3.47% and 3.02%, respectively, using *Solanum* as standard and LB01.

$2C = 0.89 \pm 0.001$  pg, PI FCM. Chile, Araucanía, Malleco, Pino Hachado, slopes immediately south of the international pass,  $38^{\circ}39'49.5''S$ ,  $70^{\circ}53'57.7''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 18PJM-CL23 (CONC, UPOS).

*Carex caduca* Boott

The CVs of sample and internal standard were 4.02% and 2.85%, respectively, using *Solanum* as standard and LB01.

$2C = 1.10 \pm 0.013$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park, Raihuen Volcano crater,  $40^{\circ}46'45.3''S$ ,  $72^{\circ}11'26.4''W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 55JMC23 (CONC, UPOS).

*Carex campyloglochin* V.I.Krecz.

The CVs of sample and internal standard were 4.78% and 4.02%, respectively, using *Solanum* as standard and LB01.

$2C = 0.99 \pm 0.006$  pg, PI FCM. Chile, Los Ríos, Cordillera Peñada, Alerce Costero National Park,  $40^{\circ}09'56.9''S$ ,  $73^{\circ}30'18.1''W$ , 01 Feb 2023, J.I. Márquez-Corro & al. 71JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.03% and 3.18%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.004$  pg, PI FCM. Chile, Los Lagos, Chiloé, Piuchué Range, San Pedro,  $42^{\circ}19'24.2''S$ ,  $73^{\circ}53'42.3''W$ , 30 Jan 2023, P. Muñoz-Schüler & al. 92.PMS.ENE (CONC, UPOS).

*Carex chlorolepis* Steud.

The CVs of sample and internal standard were 3.33% and 2.99%, respectively, using *Solanum* as standard and LB01.

$2C = 0.90 \pm 0.006$  pg, PI FCM. Chile, Los Ríos, Corral,  $39^{\circ}57'20.8''S$ ,  $73^{\circ}22'29.8''W$ , 23 Jan 2023, J.I. Márquez-Corro & al. 26JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.69% and 4.01%, respectively, using *Solanum* as standard and LB01.

$2C = 0.91 \pm 0.001$  pg, PI FCM. Chile, Biobío, Concepción, University of Concepción campus,  $36^{\circ}49'46.8''S$ ,  $73^{\circ}02'04.1''W$ , 17 Jan 2023, J.I. Márquez-Corro & al. 19JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.74% and 2.66%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.003$  pg, PI FCM. Chile, Biobío, Polcura, Laja River valley, road between Polcura and Salto del Abanico,  $37^{\circ}18'$

18.7°S, 71°38'59.5"W, 20 Jan 2023, P. Muñoz-Schüler & al. 59. PMS.ENE (CONC, UPOS).

*Carex manuelbarrosii* Jim.Mejías, Donadío, Muñoz-Schüler & A.Mor.Alonso

The CVs of sample and internal standard were 3.47% and 2.08%, respectively, using *Solanum* as standard and GPB.

$2C = 0.89 \pm 0.008$  pg, PI FCM. Chile, Araucanía, Malleco, Pino Hachado, slopes immediately south of the international pass, 38°39'49.5"S, 70°53'57.7"W, 21 Jan 2023, P. Jiménez-Mejías & al. 19PJM-CL23 (CONC, UPOS).

*Carex patagonica* Speg.

The CVs of sample and internal standard were 4.29% and 2.78%, respectively, using *Solanum* as standard and LB01.

$2C = 0.79 \pm 0.009$  pg, PI FCM. Chile, Ñuble, Chillán, between Chillán and Termas de Chillán, Las Trancas Valley, near Renegado stream, 36°55'00.1"S, 71°27'11.8"W, 18 Jan 2023, S. Martín-Bravo & al. 22SMB23 (CONC, UPOS).

*Carex pungens* Boeckeler

The CVs of sample and internal standard were 4.30% and 3.24%, respectively, using *Solanum* as standard and LB01.

$2C = 0.95 \pm 0.002$  pg, PI FCM. Chile, Ñuble, San Fabián, Los Huemules de Niblinto National Reserve, near the lodge "El Principal", on the bank of the Ñuble River, 36°39'50.2"S, 71°19'10.8"W, 25 Jan 2023, M. Sanz-Arnal & al. 25MSA-CL23, cultivated in Diego N. Penneckamp's private garden (CONC, UPOS).

The CVs of sample and internal standard were 4.50% and 4.12%, respectively, using *Solanum* as standard and LB01.

$2C = 0.89 \pm 0.003$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas, 33°21'23.4"S, 70°15'16.8"W, 16 Jan 2023, P. Jiménez-Mejías & al. 13PJM-CL23 (CONC, UPOS).

*Carex recondita* Muñoz-Schüler, Martín-Bravo & Jim.Mejías

The CVs of sample and internal standard were 4.34% and 4.12%, respectively, using *Solanum* as standard and LB01.

$2C = 0.83 \pm 0.008$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas, 33°21'23.4"S, 70°15'16.8"W, 16 Jan 2023, P. Jiménez-Mejías & al. 12PJM-CL23 (CONC, UPOS).

*Carex reicheana* Boeckeler

The CVs of sample and internal standard were 4.42% and 3.80%, respectively, using *Solanum* as standard and LB01.

$2C = 1.19 \pm 0.023$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park, 37°48'07.3"S, 73°01'02.6"W, 21 Jan 2023, S. Martín-Bravo & al. 38SMB23 (CONC, UPOS).

*Carex setifolia* Kunze ex Kunth

The CVs of sample and internal standard were 4.42% and 2.25%, respectively, using *Solanum* as standard and LB01.

$2C = 0.98 \pm 0.016$  pg, PI FCM. Chile, Coquimbo, Fray Jorge National Park, 30°38'47.8"S, 71°40'51.3"W, 12 Jan 2023, P. Muñoz-Schüler & al. 06.PMS.ENE (CONC, UPOS).

*Carex trichodes* Steud ex Boott

The CVs of sample and internal standard were 3.73% and 2.86%, respectively, using *Solanum* as standard and LB01.

$2C = 1.18 \pm 0.002$  pg, PI FCM. Chile, Los Ríos, Ranco Lake, Cordillera del Caule, 40°25'03.30"S, 72°19'41.51"W, 16 Apr 2021, D. Penneckamp & H. Lobos 607 (CONC, UPOS).

*Carex vallis-pulchrae* Phil. subsp. *vallis-pulchrae*

The CVs of sample and internal standard were 3.35% and 2.97%, respectively, using *Solanum* as standard and LB01.

$2C = 1.04 \pm 0.002$  pg, PI FCM. Chile, Coquimbo, Doña Ana Range, Minera El Indio, 29°48'54.8"S, 70°01'19.6"W, 13 Jan 2023, P. Muñoz-Schüler & al. 19.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.20% and 3.20%, respectively, using *Solanum* as standard and LB01.

$2C = 1.14 \pm 0.006$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas, 33°19'40.5"S, 70°14'54.6"W, 16 Jan 2023, P. Jiménez-Mejías & al. 06PJM-CL23 (CONC, UPOS).

*Carex via-montana* A.Mor.Alonso & Jim.Mejías

The CVs of sample and internal standard were 4.20% and 2.53%, respectively, using *Solanum* as standard and LB01.

$2C = 0.98 \pm 0.006$  pg, PI FCM. Ecuador, Pichincha, path to Cerro Corazón, 00°34'08.4"S, 78°39'52.6"W, 04 Aug 2022, A. Morales-Alonso & al. 94ECU-AMA22 (UPOS).

### Curvula Clade

*Carex curvula* All. subsp. *curvula*

The CVs of sample and internal standard were 3.10% and 3.62%, respectively, using *Oryza* as standard and GPB.

$2C = 1.97 \pm 0.001$  pg, PI FCM. Switzerland, Canton of Valais, Fieschertal, Vordersee, Märjalen-Stausee trail, 46°26'35.0"N, 08°06'35.0"E, 16 Aug 2023, R. Sánchez-Villegas & M. Luceño 19RSV23 (UPOS).

The CVs of sample and internal standard were 2.60% and 2.96%, respectively, using *Oryza* as standard and GPB.

$2C = 2.19 \pm 0.024$  pg, PI FCM. Switzerland, Canton of Valais, Bellwald, Spilsee, 46°27'40.0"N, 08°09'52.0"E, 20 Aug 2023, R. Sánchez-Villegas & M. Luceño 42RSV23 (UPOS).

### IV. Carex subg. *Siderosticta* Waterway

*Carex sect. Siderostictae* Franch. ex Ohwi

*Carex ciliatomarginata* Nakai

The CVs of sample and internal standard were 3.52% and 3.52%, respectively, using *Solanum* as standard and GPB.

$2C = 1.61 \pm 0.006$  pg, PI FCM. China, Zhejiang, Changhua, Zhelinkeng, 30°16'07.6"N, 119°06'41.3"E, 01 May 2008, Qian & al. 105, cultivated in ZJFC herbarium (ZJFC).

The CVs of sample and internal standard were 3.94% and 3.66%, respectively, using *Solanum* as standard and GPB.

$2C = 1.59 \pm 0.016$  pg, PI FCM. China, Anhui, Huangshan, 30°07'21.9"N, 118°10'13.1"E, 02 Jun 2023, P. Jiménez-Mejías & al. 71PJM-CN23 (UPOS, ZJFC).

The CVs of sample and internal standard were 4.26% and 2.92%, respectively, using *Solanum* as standard and GPB.

$2C = 1.59 \pm 0.001$  pg, PI FCM. China, Anhui, JiuHuashan, JiuHua Mountain, 30°27'57.9"N, 117°49'01.1"E, 03 Jun 2023, P. Jiménez-Mejías & al. 83PJM-CN23 (UPOS, ZJFC).

### V. Carex subg. *Uncinia* (Pers.) Peterm.

*Carex sect. Leucocephala* Holm

*Carex fraseriana* Ker Gawl.

The CVs of sample and internal standard were 4.07% and 3.26%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.50 \pm 0.022$  pg, PI FCM. United States of America, Michigan, Washtenaw Co., 42°18'06.4"N, 83°43'54.4"W, 10 Aug 2025, A.A. Reznicek 12933, cultivated in Ann Arbor, 890 Wickfield Court (MICH).

**Carex sect. *Phyllostachyae* Tuck. ex Kük.**

*Carex jamesii* Schwein.

The CVs of sample and internal standard were 2.96% and 2.02%, respectively, using *Petroselinum* as standard and GPB.

$2C = 2.59 \pm 0.002$  pg, PI FCM. United States of America, Michigan, Wayne Co., Lower Huron Metropark, T3S R8E, 42°10'49.1"N, 83°25'26.8"W, 24 May 1991, A.A. Reznicek & al. 8759, cultivated in Ann Arbor, 890 Wickfield Court (MICH).

*Carex juniperorum* Catling, Reznicek & Crins

The CVs of sample and internal standard were 3.14% and 2.49%, respectively, using *Petroselinum* as standard and GPB.

$2C = 2.64 \pm 0.008$  pg, PI FCM. United States of America, Ohio, Adams Co., Tiffin Township, Adams Lake State Park, Adams Lake prairie, 38°49'02.4"N, 83°30'59.3"W, 06 May 1991, A.A. Reznicek & al. 8742 (MICH).

*Carex latebracteata* Waterf.

The CVs of sample and internal standard were 4.04% and 3.24%, respectively, using *Petroselinum* as standard and GPB.

$2C = 2.93 \pm 0.085$  pg, PI FCM. United States of America, Arkansas, Howard Co., Route 4 crossing of the Cossatot River, 33°47'31.7"N, 94°09'13.4"W, 11 Jun 1991, A.A. Reznicek 8792, cultivated in Ann Arbor, 890 Wickfield Court (MICH).

**Carex sect. *Psilocarpare* Kük.**

*Carex sellowiana* Schlehd.

The CVs of sample and internal standard were 12.99% and 4.68%, respectively, using *Petroselinum* as standard and GPB. This measurement was performed on a sample dried in silica gel.

$2C = 3.08$  pg, PI FCM. Brazil, Paraná, Prudentópolis, 25°18'37.3"S, 51°05'57.9"W, 19 Oct 2018, L. Pereira-Silva & al. 344 (UPOS).

**Carex sect. *Seticulmes* (Kük.) Jim.Mejías & García-Moro**

*Carex seticulmis* Boeckeler

The CVs of sample and internal standard were 8.75% and 3.45%, respectively, using *Petroselinum* as standard and GPB. This measurement was performed on a sample dried in silica gel.

$2C = 3.40$  pg, PI FCM. Brazil, Rio de Janeiro, Itatiaia National Park, trail to Cachoeira do Taquaral, 22°26'43.1"S, 44°36'36.8"W, 15 Oct 2018, P. Jiménez-Mejías & al. 6B-PJM18 (UPOS).

**Carex sect. *Uncinia* (Pers.) Baill.**

*Carex astricta* K.A.Ford

The CVs of sample and internal standard were 2.71% and 2.56%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.40 \pm 0.003$  pg, PI FCM. New Zealand, North Island, Wellington Land District, Tararua Range, Mt Holdsworth, above Powell Hut, 40°53'00.2"S, 175°25'23.8"E, 31 Jan 2023, K. Ford & al. KF 1135/23, cultivated in CHR greenhouse (CHR).

*Carex crispa* K.A.Ford

The CVs of sample and internal standard were 4.49% and 3.18%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.22 \pm 0.007$  pg, PI FCM. New Zealand, South Island, Tasman District, 1000 Acre Plateau, Matiri Valley, 41°36'37.6"S, 172°20'17.9"E, 07 Feb 2024, A. Morales-Alonso & al. 131NZ-AMA24 (CHR, UPOS).

**Carex cyanea** K.A.Ford

The CVs of sample and internal standard were 4.61% and 4.50%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.22 \pm 0.005$  pg, PI FCM. New Zealand, South Island, Tasman District, Waikari Reserve, Waikari, 41°24'32.3"S, 173°02'22.1"E, 09 Feb 2024, A. Morales-Alonso & al. 154NZ-AMA24 (CHR, UPOS).

**Carex de-la-costa** (Steud.) Kuntze

The CVs of sample and internal standard were 2.69% and 3.72%, respectively, using *Solanum* as standard and LB01.

$2C = 3.02 \pm 0.003$  pg, PI FCM. Chile, Los Ríos, Cordillera Pelada, Alerce Costero National Park, 40°10'04.7"S, 73°30'28.9"W, 01 Feb 2023, J.I. Márquez-Corro & al. 66JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 2.18% and 3.29%, respectively, using *Solanum* as standard and LB01.

$2C = 3.00 \pm 0.009$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park, 40°44'57.7"S, 72°19'03.7"W, 26 Jan 2023, J.I. Márquez-Corro & al. 53JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 2.71% and 3.09%, respectively, using *Solanum* as standard and LB01.

$2C = 3.03 \pm 0.009$  pg, PI FCM. Chile, Los Lagos, Alerce Andino National Park, Sargazo sector, near the park entrance, 41°30'35.2"S, 72°36'52.3"W, 28 Jan 2023, M. Sanz-Arnal & al. 39MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.49% and 4.29%, respectively, using *Solanum* as standard and GPB.

$2C = 2.92 \pm 0.034$  pg, PI FCM. Chile, Los Ríos, Río Bueno, 40°37'32.7"S, 72°37'40.9"W, 26 Jan 2023, J.I. Márquez-Corro & al. 42JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.48% and 3.80%, respectively, using *Solanum* as standard and GPB.

$2C = 2.91 \pm 0.004$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park, Estero de los Gringos trail, 37°48'45.2"S, 73°00'45.8"W, 22 Jan 2023, S. Martín-Bravo & al. 45SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.73% and 4.32%, respectively, using *Solanum* as standard and GPB.

$2C = 2.91 \pm 0.023$  pg, PI FCM. Chile, Los Lagos, Chiloé, Piuchué Range, San Pedro, 42°19'24.2"S, 73°53'42.3"W, 30 Jan 2023, P. Muñoz-Schüler & al. 91.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 2.48% and 3.72%, respectively, using *Solanum* as standard and GPB.

$2C = 2.94 \pm 0.024$  pg, PI FCM. Chile, Araucanía, Malleco, Lonquimay, Alaska waterfall, La Cascada stream, 38°30'16.8"S, 71°24'45.2"W, 22 Jan 2023, P. García-Moro & al. 02pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.46% and 3.86%, respectively, using *Solanum* as standard and GPB.

$2C = 2.99 \pm 0.007$  pg, PI FCM. Chile, Los Ríos, Corral, 39°56'54.6"S, 73°27'35.1"W, 23 Jan 2023, J.I. Márquez-Corro & al. 29JMC23 (CONC, UPOS).

**Carex dolichophylla** J.R.Starr

The CVs of sample and internal standard were 2.42% and 3.77%, respectively, using *Solanum* as standard and LB01.

$2C = 3.20 \pm 0.006$  pg, PI FCM. Chile, Los Ríos, Cordillera Peleada, Alerce Costero National Park, forest along the road between

Hueicolla and La Unión, 36°44'50.9"S, 72°54'40.1"W, 01 Feb 2023, J.I. Márquez-Corro & al. 79JMC23 (CONC, UPOS).

#### *Carex drucei* (Hamlin) K.A.Ford

The CVs of sample and internal standard were 4.53% and 3.33%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.19 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Nelson Land District, Kahurangi National Park, Mount Brilliant, Shelter Rock Basin, 41°22'47.7"S, 172°17'51.5"E, 08 Feb 2021, K. Ford KF 890/21, cultivated in CHR greenhouse (CHR-674561).

#### *Carex ecuadorensis* (G.A.Wheeler & Goethg.) J.R.Starr

The CVs of sample and internal standard were 2.71% and 2.78%, respectively, using *Petroselinum* as standard and LB01.

$2C = 3.38 \pm 0.005$  pg, PI FCM. Ecuador, Imbabura, road to the antennas of Cotacachi, Cotacachi National Park, 00°19'47.7"N, 78°20'32.3"W, 07 Aug 2022, A. Morales-Alonso & al. 117ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 3.44% and 4.28%, respectively, using *Solanum* as standard and OXPRO.

$2C = 2.91 \pm 0.064$  pg, PI FCM. Ecuador, Imbabura, road to the antennas of Cotacachi, Cotacachi National Park, 00°19'47.7"N, 78°20'32.3"W, 07 Aug 2022, A. Morales-Alonso & al. 117ECU-AMA22 (UPOS).

#### *Carex edura* K.A.Ford

The CVs of sample and internal standard were 3.41% and 3.58%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.20 \pm 0.021$  pg, PI FCM. New Zealand, South Island, Otago Land District, The Remarkables–Rastus Burn Ski Field, Queenstown, 45°03'23.4"S, 168°48'56.8"E, 29 Jan 2024, A. Morales-Alonso & al. 38NZ-AMA24 (CHR, UPOS).

#### *Carex edura* K.A.Ford × *Carex horizontalis* (Colenso) K.A.Ford

The CVs of sample and internal standard were 3.98% and 3.56%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.24 \pm 0.025$  pg, PI FCM. New Zealand, South Island, Otago Land District, The Remarkables–Rastus Burn Ski Field, Queenstown, 45°03'23.4"S, 168°48'56.8"E, 29 Jan 2024, A. Morales-Alonso & al. 39NZ-AMA24 (CHR, UPOS).

#### *Carex egmontiana* (Hamlin) K.A.Ford

The CVs of sample and internal standard were 4.31% and 3.52%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.18 \pm 0.011$  pg, PI FCM. New Zealand, South Island, Southland Land District, West Dome, 45°33'03.3"S, 168°11'08.9"E, 29 Jan 2024, A. Morales-Alonso & al. 34NZ-AMA24 (CHR, UPOS).

#### *Carex erinacea* Cav.

The CVs of sample and internal standard were 2.76% and 3.48%, respectively, using *Solanum* as standard and LB01.

$2C = 3.29 \pm 0.008$  pg, PI FCM. Chile, Biobío, Antuco, Los Ángeles, Q-45 road, Diuto stream, 37°25'30.5"S, 72°04'34.5"W, 20 Jan 2023, M. Sanz-Arnal & al. 16MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 2.77% and 3.45%, respectively, using *Solanum* as standard and LB01.

$2C = 3.24 \pm 0.005$  pg, PI FCM. Chile, Los Ríos, Santa Elvira, hill between Santa Elvira and Cayumapa, 39°44'54.1"S, 73°09'22.9"W, 23 Jan 2023, P. Muñoz-Schüler & al. 76.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 3.21% and 3.96%, respectively, using *Solanum* as standard and LB01.

$2C = 3.32 \pm 0.018$  pg, PI FCM. Chile, Los Lagos, Llanquihue, cove north of Punta Metri, 41°35'23.9"S, 72°42'09.3"W, 27 Jan 2023, P. Jiménez-Mejías & al. 28PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 2.16% and 3.28%, respectively, using *Solanum* as standard and LB01.

$2C = 3.14 \pm 0.009$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park, recreation area by the Purén River, 37°49'42.0"S, 73°00'37.4"W, 22 Jan 2023, S. Martín-Bravo & al. 51SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 3.20% and 2.80%, respectively, using *Solanum* as standard and GPB.

$2C = 3.21 \pm 0.003$  pg, PI FCM. Chile, Los Ríos, Valdivia, Chaihuín–La Unión, road to Hueicolla from Chaihuín, 39°59'47.0"S, 73°39'24.9"W, 24 Jan 2023, P. García-Moro & al. 20pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.05% and 3.57%, respectively, using *Solanum* as standard and GPB.

$2C = 3.08 \pm 0.019$  pg, PI FCM. Chile, Los Lagos, Alerce Andino National Park, Sargazo sector, path to Laguna Sargazo, 41°30'58.3"S, 72°36'16.9"W, 28 Jan 2023, M. Sanz-Arnal & al. 29MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.54% and 4.87%, respectively, using *Solanum* as standard and GPB.

$2C = 3.08 \pm 0.011$  pg, PI FCM. Chile, Los Ríos, Corral, 39°58'22.7"S, 73°24'19.9"W, 23 Jan 2023, J.I. Márquez-Corro & al. 27JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.40% and 3.47%, respectively, using *Solanum* as standard and GPB.

$2C = 3.11 \pm 0.006$  pg, PI FCM. Chile, Los Ríos, Ranco, Lago Ranco, Quillín Forest, 40°17'27.9"S, 72°32'29.4"W, 25 Jan 2023, M. Sanz-Arnal & al. 18MSA-CL23 (CONC, UPOS).

#### *Carex erythrovaginata* K.A.Ford

The CVs of sample and internal standard were 3.16% and 2.76%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.22 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Southland Land District, between Mossburn and Te Anau, Wilderness Scientific Reserve, 45°32'00.3"S, 167°51'12.0"E, 08 Feb 2020, S. Martín-Bravo & K. Ford 115SMB-NZ (CHR).

The CVs of sample and internal standard were 3.03% and 2.31%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.34 \pm 0.006$  pg, PI FCM. New Zealand, South Island, Marlborough Land District, Clarence River, not far downstream of the Ouse stream, true right, 41°59'24.2"S, 173°50'55.6"E, 07 Nov 2021, K. Ford KF 982/21, cultivated in CHR greenhouse (CHR-674620).

#### *Carex fernandesiana* (Nees ex Boeckeler) J.R.Starr

The CVs of sample and internal standard were 3.27% and 2.77%, respectively, using *Petroselinum* as standard and OXPRO.

$2C = 3.03 \pm 0.034$  pg, PI FCM. Chile, Islas Juan Fernández, Robinson Crusoe Island, Archipiélago de Juan Fernández National Park, Carbonera de Torres sector, 33°38'45.4"S, 78°50'37.3"W, 25 Jan 2023, M. Sanz-Arnal & al. 21MSA-CL23, cultivated in Diego N. Penneckamp's private garden (CONC, UPOS).

#### *Carex firmula* (Kük.) J.R.Starr

The CVs of sample and internal standard were 3.72% and 4.59%, respectively, using *Solanum* as standard and LB01.

$2C = 2.83 \pm 0.030$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park, 40°43'54.5"S, 72°18'40.5"W, 26 Jan 2023, J.I. Márquez-Corro & al. 47JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.11% and 3.78%, respectively, using *Solanum* as standard and LB01.

$2C = 2.70 \pm 0.012$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelluta National Park, Estero de los Gringos trail,  $37^{\circ}48'46.8"S$ ,  $73^{\circ}00'42.3"W$ , 22 Jan 2023, S. Martín-Bravo & al. 50SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 2.87% and 3.16%, respectively, using *Solanum* as standard and GPB.

$2C = 2.70 \pm 0.009$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park,  $40^{\circ}46'58.1"S$ ,  $72^{\circ}13'47.6"W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 54JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.82% and 4.31%, respectively, using *Solanum* as standard and GPB.

$2C = 2.71 \pm 0.016$  pg, PI FCM. Chile, Los Ríos, Río Bueno,  $40^{\circ}37'32.7"S$ ,  $72^{\circ}37'40.9"W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 43JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.83% and 4.17%, respectively, using *Solanum* as standard and GPB.

$2C = 2.66 \pm 0.008$  pg, PI FCM. Chile, Los Ríos, Cordillera Peleada, Alerce Costero National Park,  $40^{\circ}10'04.7"S$ ,  $73^{\circ}30'28.9"W$ , 01 Feb 2023, J.I. Márquez-Corro & al. 68JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.20% and 3.58%, respectively, using *Solanum* as standard and GPB.

$2C = 2.70 \pm 0.024$  pg, PI FCM. Chile, Los Ríos, Valdivia, Chaihuín, Alerce Costero National Park, road to Gayana Ecolodge, Chaihuque stream,  $39^{\circ}57'35.1"S$ ,  $73^{\circ}32'02.8"W$ , 24 Jan 2023, P. García-Moro & al. 13pgm23 (CONC, UPOS).

#### *Carex hamata* Sw.

The CVs of sample and internal standard were 4.70% and 4.46%, respectively, using *Solanum* as standard and OXPRO.

$2C = 2.92 \pm 0.010$  pg, PI FCM. Ecuador, Pichincha, Quito-Gualea road, El Pahuma,  $00^{\circ}01'34.2"N$ ,  $78^{\circ}37'56.8"W$ , 10 Aug 2022, A. Morales-Alonso & al. 137ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 2.47% and 3.83%, respectively, using *Solanum* as standard and LB01.

$2C = 2.81 \pm 0.008$  pg, PI FCM. Ecuador, Pichincha, Andean Snipe trail, Yanacocha Biological Reserve,  $00^{\circ}07'06.8"S$ ,  $78^{\circ}35'09.3"W$ , 10 Aug 2022, A. Morales-Alonso & al. 141ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 2.13% and 2.33%, respectively, using *Petroselinum* as standard and LB01.

$2C = 3.09 \pm 0.015$  pg, PI FCM. Ecuador, Pichincha, Andean Snipe trail, Yanacocha Biological Reserve,  $00^{\circ}07'06.8"S$ ,  $78^{\circ}35'09.3"W$ , 10 Aug 2022, A. Morales-Alonso & al. 141ECU-AMA22 (UPOS).

#### *Carex hamlinii* K.A.Ford

The CVs of sample and internal standard were 3.64% and 3.02%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.32 \pm 0.017$  pg, PI FCM. New Zealand, South Island, Southland Land District, Lake Monk, Cameron Mountains, Fiordland,  $46^{\circ}00'51.0"S$ ,  $166^{\circ}56'30.5"E$ , 11 Feb 2020, K. Ford KF 701/20, cultivated in CHR greenhouse (CHR-666515).

#### *Carex horizontalis* (Colenso) K.A.Ford

The CVs of sample and internal standard were 3.68% and 3.77%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.27 \pm 0.016$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Ella Range, Jameson Ridge track,  $41^{\circ}57'25.7"S$ ,  $172^{\circ}34'14.3"E$ , 02 Jan 2020, S. Martín-Bravo & K. Ford 45SMB-NZ (CHR).

The CVs of sample and internal standard were 3.76% and 3.25%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.30 \pm 0.010$  pg, PI FCM. New Zealand, South Island, Southland Land District, Mirror Lakes, Eglinton Valley,  $45^{\circ}01'45.7"S$ ,  $168^{\circ}00'40.4"E$ , 09 Feb 2020, K. Ford KF 698/20, cultivated in CHR greenhouse (CHR-666513).

The CVs of sample and internal standard were 3.39% and 3.09%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.34 \pm 0.017$  pg, PI FCM. New Zealand, South Island, Marlborough Land District, Puhi Station, Happy Valley Stream,  $42^{\circ}11'07.3"S$ ,  $173^{\circ}43'53.2"E$ , 05 Jan 2021, K. Ford KF 856/21, cultivated in CHR greenhouse (CHR-674532).

#### *Carex imbecilla* K.A.Ford

The CVs of sample and internal standard were 4.75% and 3.77%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.25 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Tasman Land District, 1000 Acre Plateau, Matiri Valley,  $41^{\circ}36'14.1"S$ ,  $172^{\circ}19'37.7"E$ , 07 Feb 2024, A. Morales-Alonso & al. 118NZ-AMA24 (CHR, UPOS).

#### *Carex koyamae* (Gómez-Laur.) J.R.Starr

The CVs of sample and internal standard were 2.89% and 2.81%, respectively, using *Petroselinum* as standard and LB01.

$2C = 3.13 \pm 0.009$  pg, PI FCM. Ecuador, Pichincha, Papallacta Lagoon,  $00^{\circ}22'27.5"S$ ,  $78^{\circ}09'54.5"W$ , 05 Aug 2022, A. Morales-Alonso & al. 103ECU-AMA22 (UPOS).

#### *Carex laegaardii* J.R.Starr

The CVs of sample and internal standard were 1.88% and 2.90%, respectively, using *Solanum* as standard and LB01.

$2C = 2.91 \pm 0.010$  pg, PI FCM. Ecuador, Pichincha, path to Cerro Corazón,  $00^{\circ}19'28.0"S$ ,  $78^{\circ}12'03.2"W$ , 04 Aug 2022, A. Morales-Alonso & al. 95ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 2.18% and 2.58%, respectively, using *Petroselinum* as standard and LB01.

$2C = 3.09 \pm 0.014$  pg, PI FCM. Ecuador, Pichincha, path to Cerro Corazón,  $00^{\circ}19'28.0"S$ ,  $78^{\circ}12'03.2"W$ , 04 Aug 2022, A. Morales-Alonso & al. 95ECU-AMA22 (UPOS).

#### *Carex lectissima* K.A.Ford

The CVs of sample and internal standard were 3.82% and 3.16%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.11 \pm 0.010$  pg, PI FCM. New Zealand, South Island, Southland Land District, Fiordland, Cameron Mountains, Lake Monk,  $46^{\circ}00'51.0"S$ ,  $166^{\circ}56'30.5"E$ , 11 Feb 2020, K. Ford KF 701/20, cultivated in CHR greenhouse (CHR-666516).

The CVs of sample and internal standard were 3.81% and 2.85%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.12 \pm 0.039$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Ella Range, Jameson Ridge track,  $41^{\circ}58'22.4"S$ ,  $172^{\circ}32'33.4"E$ , 02 Jan 2020, S. Martín-Bravo & K. Ford 47SMB-NZ, cultivated in CHR greenhouse (CHR).

#### *Carex macrotrichoides* J.R.Starr

The CVs of sample and internal standard were 3.12% and 3.20%, respectively, using *Solanum* as standard and LB01.

$2C = 2.97 \pm 0.014$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín (between Lonquimay and Curacautín), Malalcahuuello

National Reserve, Lake Pehuenco, 38°25'46.1"S, 71°31'58.9"W, 22 Jan 2023, *P. García-Moro & al.* 10pgm23 (CONC, UPOS).

#### *Carex madida* J.R.Starr

The CVs of sample and internal standard were 2.86% and 2.57%, respectively, using *Petroselinum* as standard and LB01.

$2C = 3.17 \pm 0.006$  pg, PI FCM. Ecuador, Pichincha, close to a small floodable lagoon on the ascent to Cerro Guamaní, Cayambe-Coca National Park, 00°19'28.0"S, 78°12'03.2"W, 04 Aug 2022, *A. Morales-Alonso & al.* 96ECU-AMA22 (UPOS).

#### *Carex megalepis* K.A.Ford

The CVs of sample and internal standard were 3.63% and 3.33%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.25 \pm 0.028$  pg, PI FCM. New Zealand, South Island, Southland Land District, Kepler Track, near Waiau River, 45°29'23.6"S, 167°38'42.5"E, 30 Jan 2024, *A. Morales-Alonso & al.* 59NZ-AMA24 (CHR, UPOS).

#### *Carex minor* (Kük.) K.A.Ford

The CVs of sample and internal standard were 4.21% and 3.24%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.17 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Southland Land District, Eglinton Valley, Lake Gunn, 44°53'38.3"S, 168°04'58.8"E, 09 Feb 2020, *K. Ford s.n.*, cultivated in CHR greenhouse (CHR).

#### *Carex multifaria* (Nees ex Boott) J.R.Starr

The CVs of sample and internal standard were 2.64% and 3.74%, respectively, using *Solanum* as standard and LB01.

$2C = 3.03 \pm 0.012$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park, 40°44'15.6"S, 72°18'27.7"W, 26 Jan 2023, *J.I. Márquez-Corro & al.* 49JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 2.53% and 3.57%, respectively, using *Solanum* as standard and LB01.

$2C = 3.01 \pm 0.011$  pg, PI FCM. Chile, Los Ríos, Valdivia, Chaihuín-La Unión, road to Hueicolla from Chaihuín, 39°59'47.0"S, 73°39'24.9"W, 24 Jan 2023, *P. García-Moro & al.* 19pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.41% and 3.91%, respectively, using *Solanum* as standard and GPB.

$2C = 2.89 \pm 0.005$  pg, PI FCM. Chile, Los Ríos, Corral, 39°58'24.4"S, 73°24'21.2"W, 23 Jan 2023, *J.I. Márquez-Corro & al.* 28JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.65% and 4.52%, respectively, using *Solanum* as standard and GPB.

$2C = 2.85 \pm 0.032$  pg, PI FCM. Chile, Los Ríos, Ranco, Lago Ranco, Quillín Forest, 40°17'27.9"S, 72°32'29.4"W, 25 Jan 2023, *M. Sanz-Arnal & al.* 20MSA-CL23 (CONC, UPOS).

#### *Carex negeri* (Kük.) J.R.Starr

The CVs of sample and internal standard were 3.21% and 3.12%, respectively, using *Solanum* as standard and LB01.

$2C = 3.03 \pm 0.001$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park, parking lot at Piedra del Águila viewpoint, 37°49'21.4"S, 73°02'07.6"W, 21 Jan 2023, *S. Martín-Bravo & al.* 41SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 2.86% and 3.64%, respectively, using *Solanum* as standard and LB01.

$2C = 3.11 \pm 0.016$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park, 40°46'30.6"S, 72°11'54.3"W, 26 Jan 2023, *J.I. Márquez-Corro & al.* 57JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.53% and 3.98%, respectively, using *Solanum* as standard and GPB.

$2C = 2.93 \pm 0.003$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín (between Lonquimay and Curacautín), Malalcahuello National Reserve, Lake Pehuenco, 38°25'46.1"S, 71°31'58.9"W, 22 Jan 2023, *P. García-Moro & al.* 09pgm23 (CONC, UPOS).

#### *Carex parvispica* K.A.Ford

The CVs of sample and internal standard were 3.32% and 3.00%, respectively, using *Petroselinum* as standard and GPB.

$2C = 2.82 \pm 0.029$  pg, PI FCM. New Zealand, South Island, Otago Land District, Old Man Range, 45°21'14.7"S, 169°12'46.2"E, 30 Jan 2024, *A. Morales-Alonso & al.* 55NZ-AMA24 (CHR, UPOS).

#### *Carex penalpina* K.A.Ford

The CVs of sample and internal standard were 4.64% and 4.34%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.20 \pm 0.056$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Red Hills, Wairau Valley, next to Wairau River, Nelson, 41°44'02.4"S, 172°59'25.7"E, 08 Feb 2024, *A. Morales-Alonso & al.* 144NZ-AMA24 (CHR, UPOS).

#### *Carex phleoides* Cav.

The CVs of sample and internal standard were 2.75% and 2.57%, respectively, using *Solanum* as standard and GPB.

$2C = 2.93 \pm 0.004$  pg, PI FCM. Chile, Los Lagos, Chiloé, Puñihuil Penguin Beach, rocky promontory facing the beach, 41°55'39.5"S, 74°02'13.4"W, 29 Jan 2023, *P. Jiménez-Mejías & al.* 36PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 2.75% and 3.03%, respectively, using *Solanum* as standard and GPB.

$2C = 2.88 \pm 0.017$  pg, PI FCM. Chile, Los Ríos, Corral, 39°55'12.2"S, 73°15'00.8"W, 23 Jan 2023, *J.I. Márquez-Corro & al.* 21JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 2.77% and 2.83%, respectively, using *Solanum* as standard and GPB.

$2C = 2.93 \pm 0.023$  pg, PI FCM. Chile, Los Ríos, Ranco, Lago Ranco, Quillín Forest, 40°17'27.9"S, 72°32'29.4"W, 25 Jan 2023, *M. Sanz-Arnal & al.* 19dMSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 2.65% and 3.03%, respectively, using *Solanum* as standard and GPB.

$2C = 2.90 \pm 0.015$  pg, PI FCM. Chile, Los Ríos, Ranco, Lago Ranco, Quillín Forest, 40°17'27.9"S, 72°32'29.4"W, 25 Jan 2023, *M. Sanz-Arnal & al.* 19cMSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.92% and 3.56%, respectively, using *Solanum* as standard and GPB.

$2C = 3.01 \pm 0.013$  pg, PI FCM. Chile, Los Ríos, Ranco, Lago Ranco, Quillín Forest, 40°17'27.9"S, 72°32'29.4"W, 25 Jan 2023, *M. Sanz-Arnal & al.* 19bMSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.57% and 4.32%, respectively, using *Solanum* as standard and GPB.

$2C = 2.94 \pm 0.003$  pg, PI FCM. Chile, Los Ríos, Ranco, Lago Ranco, Quillín Forest, 40°17'27.9"S, 72°32'29.4"W, 25 Jan 2023, *M. Sanz-Arnal & al.* 19MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.35% and 3.09%, respectively, using *Solanum* as standard and GPB.

$2C = 2.96 \pm 0.005$  pg, PI FCM. Chile, Biobío, Polcura, Laja River valley, road between Polcura and Salto del Abanico, 37°18'18.7"S, 71°38'59.5"W, 20 Jan 2023, *P. Muñoz-Schüler & al.* 60.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 3.29% and 2.56%, respectively, using *Solanum* as standard and GPB.

$2C = 2.92 \pm 0.010$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín, Manchuria, Route 181 at the exit of Manchuria, parallel to the Indio River,  $38^{\circ}27'49.3"S$ ,  $71^{\circ}45'56.3"W$ , 22 Jan 2023, P. García-Moro & al. 12pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.62% and 4.04%, respectively, using *Solanum* as standard and GPB.

$2C = 2.96 \pm 0.025$  pg, PI FCM. Chile, Los Lagos, Alerce Andino National Park, Sargazo sector, path between the “El Abuelo” alerce and the alerce stand,  $41^{\circ}30'36.7"S$ ,  $72^{\circ}36'19.6"W$ , 28 Jan 2023, M. Sanz-Arnal & al. 36MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.64% and 4.25%, respectively, using *Solanum* as standard and GPB.

$2C = 2.82 \pm 0.005$  pg, PI FCM. Chile, Los Ríos, Pelchuquín, Cudico River,  $39^{\circ}38'48.1"S$ ,  $73^{\circ}07'43.0"W$ , 23 Jan 2023, P. Muñoz-Schüler & al. 69.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 3.97% and 4.34%, respectively, using *Solanum* as standard and GPB.

$2C = 2.90 \pm 0.008$  pg, PI FCM. Chile, Los Lagos, Puyehue, road near Río Pescadero,  $40^{\circ}43'00.1"S$ ,  $72^{\circ}24'09.2"W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 44JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.86% and 4.15%, respectively, using *Solanum* as standard and GPB.

$2C = 2.83 \pm 0.024$  pg, PI FCM. Chile, Los Ríos, Río Bueno,  $40^{\circ}37'32.7"S$ ,  $72^{\circ}37'40.9"W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 41JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.05% and 4.34%, respectively, using *Solanum* as standard and GPB.

$2C = 2.79 \pm 0.025$  pg, PI FCM. Chile, Los Ríos, Santa Elvira, hill between Santa Elvira and Cayumapu,  $39^{\circ}44'54.1"S$ ,  $73^{\circ}09'22.9"W$ , 23 Jan 2023, P. Muñoz-Schüler & al. 77.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 3.22% and 3.88%, respectively, using *Solanum* as standard and GPB.

$2C = 2.80 \pm 0.008$  pg, PI FCM. Chile, Biobío, Antuco, Los Angeles, Q-45 road, Diuto stream,  $40^{\circ}17'27.9"S$ ,  $72^{\circ}32'29.4"W$ , 20 Jan 2023, M. Sanz-Arnal & al. 17MSA-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 3.12% and 4.02%, respectively, using *Solanum* as standard and GPB.

$2C = 2.90 \pm 0.001$  pg, PI FCM. Chile, Los Ríos, Cayumapu, uphill road toward Santa Elvira,  $39^{\circ}44'32.1"S$ ,  $73^{\circ}08'27.1"W$ , 23 Jan 2023, P. Muñoz-Schüler & al. 75.PMS.ENE (CONC, UPOS).

#### *Carex potens* K.A.Ford

The CVs of sample and internal standard were 4.56% and 4.59%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.17 \pm 0.017$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Ella Range, below Mole Hut,  $41^{\circ}57'43.9"S$ ,  $172^{\circ}34'04.2"E$ , 02 Jan 2020, S. Martín-Bravo & K. Ford 36SMB-NZ (CHR).

#### *Carex punicea* K.A.Ford

The CVs of sample and internal standard were 3.74% and 2.97%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.18 \pm 0.007$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Ella Range, below Mole Hut,  $41^{\circ}57'31.7"S$ ,  $172^{\circ}34'25.9"E$ , 02 Jan 2020, S. Martín-Bravo & K. Ford 40SMB-NZ, cultivated in CHR greenhouse (CHR).

#### *Carex quinquin* Jim.Mejías & Dorr

The CVs of sample and internal standard were 2.33% and 3.07%, respectively, using *Solanum* as standard and LB01.

$2C = 2.96 \pm 0.017$  pg, PI FCM. Chile, Biobío, Concepción, “El Caracol” Hill, native forest of the University of Concepción,  $36^{\circ}50'13.7"S$ ,  $73^{\circ}01'29.9"W$ , 03 Jan 2023, J.I. Márquez-Corro & P. Muñoz-Schüler, 05JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.62% and 4.05%, respectively, using *Solanum* as standard and GPB.

$2C = 2.90 \pm 0.011$  pg, PI FCM. Chile, Biobío, Polcura, road from Polcura to San Antonio,  $37^{\circ}16'53.4"S$ ,  $71^{\circ}43'18.0"W$ , 20 Jan 2023, M. Sanz-Arnal & al. 02MSA-CL23 (CONC, UPOS).

#### *Carex salticola* J.R.Starr

The CVs of sample and internal standard were 3.72% and 4.60%, respectively, using *Solanum* as standard and LB01.

$2C = 3.12 \pm 0.008$  pg, PI FCM. Chile, Los Lagos, Llanquihue, Lenca, Alerce Andino National Park, ascent to Triángulo Lagoon,  $41^{\circ}34'26.8"S$ ,  $72^{\circ}32'15.7"W$ , 28 Jan 2023, P. García-Moro & al. 25pgm23 (CONC, UPOS).

The CVs of sample and internal standard were 3.24% and 4.14%, respectively, using *Solanum* as standard and LB01.

$2C = 3.14 \pm 0.012$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park,  $40^{\circ}46'55.7"S$ ,  $72^{\circ}12'46.8"W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 65JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 3.19% and 3.93%, respectively, using *Solanum* as standard and LB01.

$2C = 2.91 \pm 0.003$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelbuta National Park, Piedra del Águila viewpoint,  $37^{\circ}49'31.9"S$ ,  $73^{\circ}02'06.7"W$ , 21 Jan 2023, S. Martín-Bravo & al. 39SMB23 (CONC, UPOS).

The CVs of sample and internal standard were 4.19% and 4.24%, respectively, using *Solanum* as standard and LB01.

$2C = 2.99 \pm 0.003$  pg, PI FCM. Chile, Biobío, Polcura, Polcura Range, road to Frutillar,  $37^{\circ}16'09.1"S$ ,  $71^{\circ}44'03.0"W$ , 20 Jan 2023, P. Muñoz-Schüler & al. 51.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 2.83% and 4.20%, respectively, using *Solanum* as standard and LB01.

$2C = 3.01 \pm 0.029$  pg, PI FCM. Chile, Araucanía, Malleco, Lonquimay, Alaska waterfall, La Cascada stream,  $38^{\circ}30'16.8"S$ ,  $71^{\circ}24'45.2"W$ , 22 Jan 2023, P. García-Moro & al. 1pgm23 (CONC, UPOS).

#### *Carex strictissima* (Kük.) K.A.Ford

The CVs of sample and internal standard were 3.00% and 4.30%, respectively, using *Solanum* as standard and GPB.

$2C = 2.90 \pm 0.024$  pg, PI FCM. New Zealand, South Island, Southland, Hokonui Hills, near Otapiri Peak,  $45^{\circ}51'39.0"S$ ,  $168^{\circ}26'55.8"E$ , 01 Mar 2022, J. Bythell s.n., cultivated in CHR greenhouse (CHR-695392).

#### *Carex subsacculata* (G.A.Wheeler & Goethg.) J.R.Starr

The CVs of sample and internal standard were 3.02% and 4.60%, respectively, using *Solanum* as standard and OXPRO.

$2C = 2.67 \pm 0.022$  pg, PI FCM. Ecuador, Pichincha, Andean Snipe trail, Yanacocha Biological Reserve,  $00^{\circ}07'06.8"S$ ,  $78^{\circ}35'09.3"W$ , 10 Aug 2022, A. Morales-Alonso & al. 146ECU-AMA22 (UPOS).

#### *Carex subviridis* K.A.Ford

The CVs of sample and internal standard were 4.62% and 3.69%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.20 \pm 0.067$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Red Hills, Wairau Valley, next to Wairau

River, Nelson,  $41^{\circ}44'02.4''S$ ,  $172^{\circ}59'25.7''E$ , 08 Feb 2024, A. Morales-Alonso & al. 145NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 3.98% and 2.81%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.59 \pm 0.005$  pg, PI FCM. New Zealand, South Island, Westland Land District, Copland River, near Scott Creek, Welcome Flat,  $43^{\circ}38'20.7''S$ ,  $169^{\circ}58'42.2''E$ , 09 Jul 2021, K. Ford KF 961/21, cultivated in CHR greenhouse (CHR-674570).

#### *Carex turbaria* J.R.Starr

The CVs of sample and internal standard were 3.40% and 4.54%, respectively, using *Solanum* as standard and LB01.

$2C = 2.92 \pm 0.030$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park,  $40^{\circ}46'51.5''S$ ,  $72^{\circ}12'39.6''W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 60JMC23 (CONC, UPOS).

#### *Carex uncinata* L.f.

The CVs of sample and internal standard were 4.69% and 4.20%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.23 \pm 0.014$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Matiri Valley, mountain forest, track descending the mountain,  $41^{\circ}37'56.3''S$ ,  $172^{\circ}19'26.3''E$ , 07 Feb 2024, A. Morales-Alonso & al. 136NZ-AMA24 (CHR, UPOS).

#### *Carex zotovii* (Hamlin) K.A.Ford

The CVs of sample and internal standard were 4.31% and 3.54%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.13 \pm 0.015$  pg, PI FCM. New Zealand, South Island, Southland Land District, Lake Gunn, Eglinton Valley,  $44^{\circ}53'38.3''S$ ,  $168^{\circ}04'58.8''E$ , 09 Feb 2020, K. Ford KF 696/20, cultivated in CHR greenhouse (CHR-666512, UPOS).

The CVs of sample and internal standard were 4.69% and 3.87%, respectively, using *Petroselinum* as standard and GPB.

$2C = 3.19 \pm 0.021$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Matiri Valley, mountain forest, track descending the mountain,  $41^{\circ}37'56.3''S$ ,  $172^{\circ}19'26.3''E$ , 07 Feb 2024, A. Morales-Alonso & al. 134NZ-AMA24 (CHR, UPOS).

### VI. *Carex* subg. *Vignea* (P.Beauv. ex T.Lestib.) Heer

#### *Carex sect. Ammoglochin* Dumort.

##### *Carex praecox* Schreb.

The CVs of sample and internal standard were 4.61% and 4.18%, respectively, using *Solanum* as standard and GPB.

$2C = 0.74 \pm 0.003$  pg, PI FCM. Spain, Barcelona, Guillerías Range, Vilanova de Sau, between Camping el Pont and Malafogassa bridge,  $41^{\circ}56'07.2''N$ ,  $02^{\circ}24'36.4''E$ , 28 Apr 2023, J. Jurado & M. Luceño 4JJS23 (UPOS).

The CVs of sample and internal standard were 4.66% and 3.56%, respectively, using *Solanum* as standard and GPB.

$2C = 0.76 \pm 0.013$  pg, PI FCM. Spain, Barcelona, Guillerías Range, Vilanova de Sau, between Camping el Pont and Malafogassa bridge,  $41^{\circ}56'07.2''N$ ,  $02^{\circ}24'36.4''E$ , 28 Apr 2023, J. Jurado & M. Luceño 4JJS23 (UPOS).

#### *Carex sect. Bracteosae* Pax

##### *Carex bracteosa* Kunze

The CVs of sample and internal standard were 4.76% and 3.15%, respectively, using *Solanum* as standard and LB01.

$2C = 0.97 \pm 0.015$  pg, PI FCM. Chile, Biobío, Concepción, University of Concepción campus,  $36^{\circ}49'40.5''S$ ,  $73^{\circ}02'$

$08.2''W$ , 17 Jan 2023, J.I. Márquez-Corro & al. 18JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.21% and 2.98%, respectively, using *Solanum* as standard and LB01.

$2C = 0.97 \pm 0.009$  pg, PI FCM. Chile, Araucanía, Malleco, Lonquimay, Alaska waterfall, La Cascada stream,  $38^{\circ}30'16.8''S$ ,  $71^{\circ}24'45.2''W$ , 22 Jan 2023, P. García-Moro & al. 03pgm23 (CONC, UPOS).

#### *Carex sect. Cyperoideae* G.Don

##### *Carex bonplandii* Kunth

The CVs of sample and internal standard were 3.27% and 3.15%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.53 \pm 0.010$  pg, PI FCM. Ecuador, Pichincha, Lower Lagoon, Cayambe-Coca National Park,  $00^{\circ}19'41.7''S$ ,  $78^{\circ}12'02.0''W$ , 04 Aug 2022, A. Morales-Alonso & al. 97ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 3.68% and 4.24%, respectively, using *Solanum* as standard and OXPRO.

$2C = 1.55 \pm 0.011$  pg, PI FCM. Ecuador, Pichincha, entrance to Cayambe-Coca National Park,  $00^{\circ}19'45.6''S$ ,  $78^{\circ}12'06.4''W$ , 04 Aug 2022, A. Morales-Alonso & al. 100ECU-AMA22 (UPOS).

The CVs of sample and internal standard were 3.32% and 2.52%, respectively, using *Petroselinum* as standard and OXPRO.

$2C = 1.76 \pm 0.006$  pg, PI FCM. Ecuador, Pichincha, entrance to Cayambe-Coca National Park,  $00^{\circ}19'45.6''S$ ,  $78^{\circ}12'06.4''W$ , 04 Aug 2022, A. Morales-Alonso & al. 100ECU-AMA22 (UPOS).

##### *Carex leporina* L.

The CVs of sample and internal standard were 3.85% and 3.01%, respectively, using *Solanum* as standard and GPB.

$2C = 0.68 \pm 0.002$  pg, PI FCM. France, Eastern Pyrénées Department, road from Mont-Louis to La Bollosa reservoir, path to Estany Largo, Estany del Racó,  $42^{\circ}33'20.3''N$ ,  $02^{\circ}00'33.8''E$ , 17 Jul 2023, S. Martín-Bravo & al. 112SMB23 (UPOS).

The CVs of sample and internal standard were 4.53% and 3.38%, respectively, using *Solanum* as standard and LB01.

$2C = 0.69 \pm 0.002$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park,  $40^{\circ}43'54.5''S$ ,  $72^{\circ}18'40.5''W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 48JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.97% and 2.16%, respectively, using *Solanum* as standard and GPB.

$2C = 0.76 \pm 0.008$  pg, PI FCM. Chile, Araucanía, Malleco, Curacautín, Route 181,  $38^{\circ}27'40.2''S$ ,  $71^{\circ}42'23.0''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 17PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 4.74% and 2.99%, respectively, using *Solanum* as standard and LB01.

$2C = 0.73 \pm 0.003$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park,  $40^{\circ}46'51.5''S$ ,  $72^{\circ}12'39.6''W$ , 26 Jan 2023, J.I. Márquez-Corro & al. 59JMC23 (CONC, UPOS).

##### *Carex longii* Mack.

The CVs of sample and internal standard were 2.75% and 2.82%, respectively, using *Petroselinum* as standard and LB01.

$2C = 6.46 \pm 0.055$  pg, PI FCM. Ecuador, Pichincha, exit of the "Culuncó" formation, path around Pondoña Hill, Pululahua Geobotanical Reserve,  $00^{\circ}03'31.9''N$ ,  $78^{\circ}29'37.0''W$ , 08 Aug 2022, A. Morales-Alonso & al. 13IECU-AMA22 (UPOS).

The CVs of sample and internal standard were 2.71% and 2.45%, respectively, using *Petroselinum* as standard and LB01.

$2C = 6.56 \pm 0.055$  pg, PI FCM. Ecuador, Pichincha, exit of the "Culuncó" formation, path around Pondoña Hill, Pululahua

Geobotanical Reserve, 00°03'31.9"N, 78°29'37.0"W, 08 Aug 2022, *A. Morales-Alonso & al. 131ECU-AMA22* (UPOS).

The CVs of sample and internal standard were 2.28% and 3.79%, respectively, using *Solanum* as standard and LB01.

$2C = 5.87 \pm 0.026$  pg, PI FCM. Ecuador, Pichincha, exit of the "Culuncó" formation, path around Pondoña Hill, Pululahua Geobotanical Reserve, 00°03'31.9"N, 78°29'37.0"W, 08 Aug 2022, *A. Morales-Alonso & al. 131ECU-AMA22* (UPOS).

The CVs of sample and internal standard were 3.42% and 3.59%, respectively, using *Solanum* as standard and LB01.

$2C = 5.95 \pm 0.059$  pg, PI FCM. Ecuador, Pichincha, exit of the "Culuncó" formation, path around Pondoña Hill, Pululahua Geobotanical Reserve, 00°03'31.9"N, 78°29'37.0"W, 08 Aug 2022, *A. Morales-Alonso & al. 131ECU-AMA22* (UPOS).

#### *Carex macloviana* d'Urv.

The CVs of sample and internal standard were 4.64% and 4.25%, respectively, using *Solanum* as standard and LB01.

$2C = 0.78 \pm 0.006$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas, 33°19'34.0"S, 70°14'30.2"W, 16 Jan 2023, *P. Jiménez-Mejías & al. 8PJM-CL23* (CONC, UPOS).

The CVs of sample and internal standard were 4.98% and 3.29%, respectively, using *Solanum* as standard and LB01.

$2C = 0.81 \pm 0.009$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas, 33°19'34.0"S, 70°14'30.2"W, 16 Jan 2021, *P. Jiménez-Mejías & al. 9PJM-CL23* (CONC, UPOS).

The CVs of sample and internal standard were 4.71% and 3.56%, respectively, using *Solanum* as standard and GPB.

$2C = 0.72 \pm 0.002$  pg, PI FCM. Chile, Ñuble, Chillán, between Chillán and Termas de Chillán, Las Trancas Valley, near Renegado stream, 36°55'00.1"S, 71°27'11.8"W, 18 Jan 2023, *S. Martín-Bravo & al. 23SMB23* (CONC, UPOS).

The CVs of sample and internal standard were 4.43% and 2.06%, respectively, using *Solanum* as standard and GPB.

$2C = 0.73 \pm 0.002$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, Aguascalientes Valley, 36°54'23.5"S, 71°22'30.5"W, 18 Jan 2023, *S. Martín-Bravo & al. 12SMB23* (CONC, UPOS).

The CVs of sample and internal standard were 3.90% and 2.22%, respectively, using *Solanum* as standard and GPB.

$2C = 0.72 \pm 0.006$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, Aguascalientes Valley, 36°54'15.7"S, 71°22'35.0"W, 18 Jan 2023, *S. Martín-Bravo & al. 04SMB23* (CONC, UPOS).

#### *Carex sect. Gibbae* Kük.

##### *Carex gibba* Wahlenb.

The CVs of sample and internal standard were 3.78% and 2.91%, respectively, using *Solanum* as standard and GPB.

$2C = 1.00 \pm 0.003$  pg, PI FCM. China, Anhui, Huangshan, 30°06'22.1"N, 118°10'08.0"E, 02 Jun 2023, *P. Jiménez-Mejías & al. 77PJM-CN23* (UPOS, ZJFC).

The CVs of sample and internal standard were 3.78% and 3.12%, respectively, using *Solanum* as standard and GPB.

$2C = 1.03 \pm 0.003$  pg, PI FCM. China, Zhejiang, Taohua Island, 29°49'12.5"N, 122°17'32.3"E, 05 Jun 2023, *P. Jiménez-Mejías & al. 100PJM-CN23* (UPOS, ZJFC).

The CVs of sample and internal standard were 3.88% and 2.83%, respectively, using *Solanum* as standard and GPB.

$2C = 1.04 \pm 0.003$  pg, PI FCM. China, Anhui, Qiyunshan, 29°48'30.2"N, 118°02'05.3"E, 01 Jun 2023, *P. Jiménez-Mejías & al. 58PJM-CN23* (UPOS, ZJFC).

#### *Carex sect. Glareosae* G.Don

##### *Carex canescens* L.

The CVs of sample and internal standard were 4.50% and 3.00%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.011$  pg, PI FCM. France, Eastern Pyrénées Department, road from Mont-Louis to La Bollosa reservoir, path to Estany Largo, Estany del Racó, 42°33'20.3"N, 02°00'33.8"E, 17 Jul 2023, *S. Martín-Bravo & al. 113SMB23* (UPOS).

The CVs of sample and internal standard were 4.96% and 3.52%, respectively, using *Solanum* as standard and LB01.

$2C = 0.93 \pm 0.010$  pg, PI FCM. Chile, Los Lagos, Puyehue National Park, 40°46'51.5"S, 72°12'39.6"W, 26 Jan 2023, *J.I. Márquez-Corro & al. 58JMC23* (CONC, UPOS).

The CVs of sample and internal standard were 4.44% and 3.88%, respectively, using *Solanum* as standard and LB01.

$2C = 0.83 \pm 0.001$  pg, PI FCM. Chile, Araucanía, Malleco, Nahuelpata National Park, 37°48'07.0"S, 73°01'04.7"W, 21 Jan 2023, *S. Martín-Bravo & al. 25SMB23* (CONC, UPOS).

The CVs of sample and internal standard were 3.09% and 2.37%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.002$  pg, PI FCM. Chile, Los Lagos, Chiloé, Piuchué Range, San Pedro, 42°19'24.2"S, 73°53'42.3"W, 30 Jan 2023, *P. Muñoz-Schüler & al. 97.PMS.ENE* (CONC, UPOS).

The CVs of sample and internal standard were 4.37% and 2.42%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.006$  pg, PI FCM. Chile, Araucanía, Malleco, Pino Hachado, 38°39'17.5"S, 70°55'14.7"W, 21 Jan 2023, *P. Jiménez-Mejías & al. 22PJM-CL23* (CONC, UPOS).

The CVs of sample and internal standard were 4.18% and 2.36%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.004$  pg, PI FCM. Switzerland, Canton of Valais, Blatten, path from Blatten to the Massaweg gorge, 46°21'45.0"N, 07°59'35.0"E, 17 Aug 2023, *R. Sánchez-Villegas & M. Luceño 29RSV23* (UPOS).

#### *Carex furva* Webb

The CVs of sample and internal standard were 3.70% and 2.93%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.002$  pg, PI FCM. Spain, Granada, Laguna Aguas Verdes, 37°02'55.1"N, 03°22'5.2"W, 03 Aug 2022, *R. Sánchez-Villegas & al. 146RSV22* (UPOS-16956).

#### *Carex lachenalii* Schkuhr

The CVs of sample and internal standard were 4.32% and 3.65%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.012$  pg, PI FCM. New Zealand, South Island, Otago Land District, Old Woman Range, 45°15'41.2"S, 169°04'04.7"E, 08 Apr 2021, *K. Ford & A. Purves 957/21* (CHR).

The CVs of sample and internal standard were 4.08% and 2.96%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.004$  pg, PI FCM. Switzerland, Canton of Valais, Fieschertal, Märjelensee, Märjalen-Stausee trail, 46°26'23.0"N, 008°05'49.0"E, 16 Aug 2023, *R. Sánchez-Villegas & M. Luceño, 25RSV23* (UPOS).

#### *Carex sect. Heleoglochin* Dumort.

##### *Carex paniculata* subsp. *lusitanica* (Willd.) Maire

The CVs of sample and internal standard were 3.99% and 3.48%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.004$  pg, PI FCM. Spain, Ávila, El Barco de Ávila, banks of the Tormes River,  $40^{\circ}20'41.2''N$ ,  $05^{\circ}31'55.9''W$ , 01 Apr 2022, *M. Luceño & al. s.n.* (UPOS).

The CVs of sample and internal standard were 4.55% and 3.83%, respectively, using *Solanum* as standard and GPB.

$2C = 0.83 \pm 0.005$  pg, PI FCM. Spain, Ávila, El Barco de Ávila, road to Navatejares, near the bridge over the Aravalle River,  $40^{\circ}21'06.7''N$ ,  $05^{\circ}32'08.4''W$ , 19 Aug 2023, *S. Martín-Bravo & A. Rodríguez Saéz 127SMB23* (UPOS).

#### *Carex paniculata* L. subsp. *paniculata*

The CVs of sample and internal standard were 4.53% and 3.58%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.003$  pg, PI FCM. Switzerland, Canton of Valais, Grächen, Zumsee,  $46^{\circ}11'46.5''N$ ,  $07^{\circ}50'43.3''E$ , 26 Aug 2023, *R. Sánchez-Villegas & M. Luceño 59RSV23* (UPOS).

#### *Carex sect. Inversae* Kük.

##### *Carex colensoi* Boott

The CVs of sample and internal standard were 4.50% and 3.50%, respectively, using *Solanum* as standard and GPB.

$2C = 0.61 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Cass Field Station,  $43^{\circ}02'07.9''S$ ,  $171^{\circ}45'06.1''E$ , 14 Jan 2022, *K.A. Ford, KF 1339/22*, cultivated in CHR greenhouse (CHR-695393).

##### *Carex inversa* R.Br.

The CVs of sample and internal standard were 4.69% and 3.76%, respectively, using *Solanum* as standard and GPB.

$2C = 0.62 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Christchurch, base of Huntsbury Hill, empty section off a lane in Endicott Place, front of section no. 7,  $43^{\circ}34'11.1''S$ ,  $172^{\circ}38'44.9''E$ , 15 Nov 2021, *K. Ford KF 986/21*, cultivated in CHR greenhouse (CHR-666748).

The CVs of sample and internal standard were 4.22% and 2.64%, respectively, using *Solanum* as standard and GPB.

$2C = 0.67 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Nelson Land District, Matiri River, flats just above Lake Jeanette,  $41^{\circ}31'00.9''S$   $172^{\circ}22'58.0''E$ , 09 Apr 2022, *C. Morse KF 1056/22*, cultivated in CHR greenhouse (CHR-666749).

##### *Carex kirkii* Petrie

The CVs of sample and internal standard were 3.33% and 4.54%, respectively, using *Solanum* as standard and GPB.

$2C = 1.63$  pg, PI FCM. New Zealand, South Island, Otago Land District, Pisa Range, above Lake McKay,  $44^{\circ}50'54.4''S$ ,  $169^{\circ}12'40.9''E$ , 12 Feb 2020, *K. Ford KF 707/20*, cultivated in CHR greenhouse (CHR-666736).

The CVs of sample and internal standard were 3.98% and 2.61%, respectively, using *Petroselinum* as standard and GPB.

$2C = 1.81 \pm 0.014$  pg, PI FCM. New Zealand, South Island, Otago Land District, Pisa Range, above Lake McKay,  $44^{\circ}50'54.4''S$ ,  $169^{\circ}12'40.9''E$ , 12 Feb 2020, *K. Ford KF 707/20*, cultivated in CHR greenhouse (CHR-666736).

##### *Carex kirkii* Petrie × *C. pterocarpa* Petrie

The CVs of sample and internal standard were 3.89% and 3.87%, respectively, using *Solanum* as standard and GPB.

$2C = 1.68 \pm 0.005$  pg, PI FCM. New Zealand, South Island, Otago Land District, Old Man Range, near Obelisk, at the head of

Conroys Creek,  $45^{\circ}19'10.9''S$ ,  $169^{\circ}12'47.7''E$ , 07 Dec 2022, *K. Ford KF 1103/22*, cultivated in CHR greenhouse (CHR-666740).

##### *Carex maackii* Maxim.

The CVs of sample and internal standard were 4.29% and 3.03%, respectively, using *Solanum* as standard and GPB.

$2C = 0.70 \pm 0.002$  pg, PI FCM. China, Zhejiang, Ningbo, Hangzhou Bay,  $30^{\circ}21'54.4''N$ ,  $121^{\circ}10'31.1''E$ , 04 Jun 2023, *P. Jiménez-Mejías & al. 86PJM-CN23* (UPOS, ZJFC).

##### *Carex muelleri* Petrie

The CVs of sample and internal standard were 4.82% and 4.58%, respectively, using *Solanum* as standard and GPB.

$2C = 1.54 \pm 0.008$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Bush Stream Basin Tarns, Sinclair Range,  $43^{\circ}43'41.8''S$ ,  $170^{\circ}45'31.9''E$ , 23 Feb 2020, *K. Ford KF 746/20*, cultivated in CHR greenhouse (CHR-667241).

The CVs of sample and internal standard were 4.70% and 3.54%, respectively, using *Petroselinum* as standard and GPB.

$2C = 1.66 \pm 0.014$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Bush Stream Basin Tarns, Sinclair Range,  $43^{\circ}43'41.8''S$ ,  $170^{\circ}45'31.9''E$ , 23 Feb 2020, *K. Ford KF 746/20*, cultivated in CHR greenhouse (CHR-667241).

The CVs of sample and internal standard were 4.27% and 4.40%, respectively, using *Solanum* as standard and GPB.

$2C = 1.54 \pm 0.007$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Bush Stream Basin Tarns, Sinclair Range,  $43^{\circ}43'41.8''S$ ,  $170^{\circ}45'31.9''E$ , 23 Feb 2020, *K. Ford KF 746/20*, cultivated in CHR greenhouse (CHR-667241).

##### *Carex resectans* Cheeseman

The CVs of sample and internal standard were 4.22% and 2.98%, respectively, using *Solanum* as standard and GPB.

$2C = 0.66 \pm 0.011$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lake Heron, above Harrisons Bight, small drainage channel off the terrace crest,  $43^{\circ}28'39.4''S$ ,  $171^{\circ}12'14.3''E$ , 20 Jan 2022, *K. Ford KF 1008/22*, cultivated in CHR greenhouse (CHR-695387).

##### *Carex trachycarpa* Cheeseman

The CVs of sample and internal standard were 3.94% and 2.08%, respectively, using *Petroselinum* as standard and GPB.

$2C = 1.79 \pm 0.017$  pg, PI FCM. New Zealand, South Island, Nelson Land District, Mt Arthur, summit,  $41^{\circ}13'07.8''S$ ,  $172^{\circ}40'55.4''E$ , 02 Jan 2019, *K. Ford KF 634/19*, cultivated in CHR greenhouse (CHR-666555).

The CVs of sample and internal standard were 4.56% and 4.65%, respectively, using *Solanum* as standard and GPB.

$2C = 1.63$  pg, PI FCM. New Zealand, South Island, Nelson Land District, Mt Arthur, summit,  $41^{\circ}13'07.8''S$ ,  $172^{\circ}40'55.4''E$ , 02 Jan 2019, *K. Ford KF 634/19*, cultivated in CHR greenhouse (CHR-666555).

##### *Carex sect. Macrocephala* Kük.

##### *Carex kobomugi* Ohwi

The CVs of sample and internal standard were 4.74% and 2.34%, respectively, using *Solanum* as standard and GPB.

$2C = 0.76 \pm 0.010$  pg, PI FCM. China, Zhejiang, Taohua Island,  $29^{\circ}49'12.5''N$ ,  $122^{\circ}17'32.3''E$ , 05 Jun 2023, *P. Jiménez-Mejías & al. 92PJM-CN23* (UPOS, ZJFC).

### **Carex sect. Phaestoglochin Dumort.**

#### *Carex divulsa* Stokes

The CVs of sample and internal standard were 4.70% and 3.62%, respectively, using *Solanum* as standard and GPB.

$2C = 0.94 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lincoln Landcare Research, Lincoln,  $43^{\circ}38'27.3"S, 172^{\circ}28'37.8"E$ , 25 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías INZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.70% and 3.43%, respectively, using *Solanum* as standard and GPB.

$2C = 0.98 \pm 0.003$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lincoln Landcare Research, Lincoln,  $43^{\circ}38'27.3"S, 172^{\circ}28'37.8"E$ , 25 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías INZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.00% and 3.39%, respectively, using *Solanum* as standard and GPB.

$2C = 0.94 \pm 0.007$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, track beside the river beginning at Princess Margaret Hospital, Christchurch,  $43^{\circ}34'17.3"S, 172^{\circ}37'04.8"E$ , 26 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías 2NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 3.68% and 3.47%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, track beside the river beginning at Princess Margaret Hospital, Christchurch,  $43^{\circ}34'17.3"S, 172^{\circ}37'04.8"E$ , 26 Jan 2024, A. Morales-Alonso & P. Jiménez-Mejías 2NZ-AMA24 (CHR, UPOS).

#### *Carex muricata* L.

The CVs of sample and internal standard were 5.76% and 3.64%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.003$  pg, PI FCM. Switzerland, Canton of Valais, Lax,  $46^{\circ}23'44.9"N, 008^{\circ}07'13.4"E$ , 17 Aug 2023, R. Sánchez-Villegas & M. Luceño 27RSV23 (UPOS).

The CVs of sample and internal standard were 4.66% and 3.39%, respectively, using *Solanum* as standard and GPB.

$2C = 0.98 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Claverley, Conway River,  $42^{\circ}36'07.8"S, 173^{\circ}27'10.8"E$ , 08 Jun 2024, M. Giller KF 1254/24, cultivated in CHR greenhouse (CHR).

#### *Carex otrubae* Podp.

The CVs of sample and internal standard were 3.92% and 3.00%, respectively, using *Solanum* as standard and GPB.

$2C = 1.33 \pm 0.002$  pg, PI FCM. Spain, Sevilla, Dos Hermanas, UPO campus, UPO lagoons,  $37^{\circ}21'24.9"N, 05^{\circ}56'03.5"W$ , 20 Jul 2023, S. Martín-Bravo & P. Jiménez-Mejías 117SMB23 (UPOS).

The CVs of sample and internal standard were 4.70% and 4.36%, respectively, using *Solanum* as standard and GPB.

$2C = 0.95 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Tasman Land District, Richmond marsh,  $41^{\circ}17'13.8"S, 173^{\circ}07'36.5"E$ , 08 Feb 2024, A. Morales-Alonso & al. 149bisNZ-AMA24 (CHR, UPOS).

#### *Carex pairae* F.W.Schultz

The CVs of sample and internal standard were 4.21% and 2.79%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.005$  pg, PI FCM. France, Eastern Pyrénées Department, Latour de Carol, Serra Blanca de la Tor, path to Sant Pere

de Sedret,  $42^{\circ}27'11.5"N, 01^{\circ}53'19.2"E$ , 16 Jul 2023, S. Martín-Bravo & al. 81SMB23 (UPOS).

#### *Carex spicata* Huds.

The CVs of sample and internal standard were 3.24% and 2.20%, respectively, using *Solanum* as standard and GPB.

$2C = 0.91 \pm 0.000$  pg, PI FCM. Switzerland, Canton of Valais, Grächen, Eggeri-Suon path,  $46^{\circ}11'24.0"N, 07^{\circ}50'38.0"E$ , 26 Aug 2023, R. Sánchez-Villegas & M. Luceño 60RSV23 (UPOS).

### **Carex sect. Phleoideae Meinh.**

#### *Carex neurocarpa* Maxim.

The CVs of sample and internal standard were 4.61% and 3.03%, respectively, using *Solanum* as standard and GPB.

$2C = 0.55 \pm 0.003$  pg, PI FCM. China, Anhui, Jiusha village,  $29^{\circ}49'33.5"N, 118^{\circ}35'54.2"E$ , 31 May 2023, P. Jiménez-Mejías & al. 47PJM-CN23 (UPOS, ZJFC).

### **Carex sect. Physoglochin Neck. ex Dumort.**

#### *Carex davalliana* Sm.

The CVs of sample and internal standard were 3.88% and 3.30%, respectively, using *Solanum* as standard and GPB.

$2C = 1.26 \pm 0.001$  pg, PI FCM. Switzerland, Canton of Valais, Zermatt, descent from the foot of the Matterhorn to Zermatt via Schwarzsee station,  $45^{\circ}59'34.8"N, 07^{\circ}42'19.2"E$ , 23 Aug 2023, R. Sánchez-Villegas & M. Luceño 53RSV23 (UPOS).

### **Carex sect. Remotae C.B.Clarke**

#### *Carex rochebrunnei* Franch. & Sav.

The CVs of sample and internal standard were 5.17% and 2.99%, respectively, using *Solanum* as standard and GPB.

$2C = 0.82 \pm 0.009$  pg, PI FCM. China, Zhejiang, Tianmushan, Xitianmu Natural Reserve, 30 May 2023,  $30^{\circ}20'28.1"N, 119^{\circ}26'41.5"E$ , P. Jiménez-Mejías & al. 27PJM-CN23 (UPOS, ZJFC).

### **Annectens Clade**

#### *Carex brongniartii* Kunth

The CVs of sample and internal standard were 3.79% and 3.16%, respectively, using *Solanum* as standard and LB01.

$2C = 0.84 \pm 0.010$  pg, PI FCM. Chile, Biobío, Hualpén, Hualpén Peninsula, Terrestrial Biology Station,  $36^{\circ}47'50.0"S, 73^{\circ}09'30.6"W$ , 04 Jan 2023, P. Muñoz-Schüler & al. 02.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.92% and 2.94%, respectively, using *Solanum* as standard and LB01.

$2C = 1.00 \pm 0.017$  pg, PI FCM. Chile, Biobío, Concepción, University of Concepción campus,  $36^{\circ}49'40.5"S, 73^{\circ}02'08.2"W$ , 17 Jan 2023, J.I. Márquez-Corro & al. 16JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.69% and 2.77%, respectively, using *Solanum* as standard and GPB.

$2C = 0.99 \pm 0.003$  pg, PI FCM. Chile, Biobío, Polcura, Polcura Range, road to Frutillar,  $37^{\circ}16'23.0"S, 71^{\circ}45'37.1"W$ , 20 Jan 2023, P. Muñoz-Schüler & al. 48.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.45% and 1.93%, respectively, using *Solanum* as standard and GPB.

$2C = 0.93 \pm 0.008$  pg, PI FCM. Chile, Los Ríos, Corral,  $39^{\circ}56'59.5"S, 73^{\circ}18'50.2"W$ , 23 Jan 2023, J.I. Márquez-Corro & al. 24JMC23 (CONC, UPOS).

The CVs of sample and internal standard were 4.07% and 2.66%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.001$  pg, PI FCM. Chile, Biobío, Polcura, road from Polcura to San Antonio,  $37^{\circ}16'53.4''S$ ,  $71^{\circ}43'18.0''W$ , 20 Jan 2023, M. Sanz-Arnal & al. 06MSA-CL23 (CONC, UPOS).

#### *Carex diandra* Schrank × *Carex secta* Boott.

The CVs of sample and internal standard were 4.20% and 3.89%, respectively, using *Solanum* as standard and GPB.

$2C = 0.92 \pm 0.002$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lees Valley,  $43^{\circ}04'39.4''S$ ,  $172^{\circ}15'28.6''E$ , 22 Nov 2021, J. Butt KF 994/21, cultivated in CHR greenhouse (CHR-674612).

#### *Carex firmicaulis* Kalela

The CVs of sample and internal standard were 4.23% and 3.52%, respectively, using *Solanum* as standard and LB01.

$2C = 1.05 \pm 0.009$  pg, PI FCM. Chile, Biobío, Antuco, Laguna del Laja National Park, Los Barros sector,  $37^{\circ}27'43.8''S$ ,  $71^{\circ}19'07.0''W$ , 20 Jan 2023, P. Muñoz-Schüler & al. 63.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.93% and 3.34%, respectively, using *Solanum* as standard and GPB.

$2C = 0.90 \pm 0.017$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, Aguascalientes Valley,  $36^{\circ}54'23.5''S$ ,  $71^{\circ}22'30.5''W$ , 18 Jan 2023, S. Martín-Bravo & al. 10SMB23 (CONC, UPOS).

#### *Carex gayana* Desv.

The CVs of sample and internal standard were 5.00% and 3.39%, respectively, using *Solanum* as standard and LB01.

$2C = 0.82 \pm 0.003$  pg, PI FCM. Chile, Santiago, Farellones, Valle Nevado ski resort, Tres Puntas,  $33^{\circ}19'34.0''S$ ,  $70^{\circ}14'30.2''W$ , 16 Jan 2023, P. Jiménez-Mejías & al. 11PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 4.11% and 3.61%, respectively, using *Solanum* as standard and LB01.

$2C = 0.80 \pm 0.000$  pg, PI FCM. Chile, Coquimbo, Tulahuén, Río Grande valley, before Cuesta del Toro,  $30^{\circ}57'24.6''S$ ,  $70^{\circ}31'39.1''W$ , 15 Jan 2023, P. Muñoz-Schüler & al. 41.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.49% and 2.84%, respectively, using *Solanum* as standard and LB01.

$2C = 0.90 \pm 0.025$  pg, PI FCM. Chile, Coquimbo, Doña Ana Range, Minera El Indio,  $29^{\circ}48'54.8''S$ ,  $70^{\circ}01'19.6''W$ , 13 Jan 2023, P. Muñoz-Schüler & al. 18.PMS.ENE (CONC, UPOS).

The CVs of sample and internal standard were 4.61% and 2.72%, respectively, using *Solanum* as standard and GPB.

$2C = 1.06 \pm 0.009$  pg, PI FCM. Chile, Araucanía, Malleco, Pino Hachado,  $38^{\circ}39'17.5''S$ ,  $70^{\circ}55'14.7''W$ , 21 Jan 2023, P. Jiménez-Mejías & al. 26PJM-CL23 (CONC, UPOS).

The CVs of sample and internal standard were 5.25% and 2.82%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.007$  pg, PI FCM. Chile, Ñuble, Chillán, Termas de Chillán, Aguascalientes Valley,  $36^{\circ}54'23.5''S$ ,  $71^{\circ}22'30.5''W$ , 18 Jan 2023, S. Martín-Bravo & al. 13SMB23 (CONC, UPOS).

#### *Carex stipata* Muhl. ex Willd.

The CVs of sample and internal standard were 2.65% and 2.71%, respectively, using *Raphanus* as standard and Otto I-II buffer.

$2C = 0.78 \pm 0$  pg, PI FCM. South Korea, Seonjaryeong, Daegwallyeong Maru-gil, Daegwallyeong-myeon, Pyeongchang-gun, Gangwon-do,  $37^{\circ}41'26.8''N$ ,  $128^{\circ}45'26.7''E$ , 29 Jun 2022, Y. Cho & S. Kim 2022-013 (SWU0054347).

### Appressa Clade

#### *Carex appressa* R.Br.

The CVs of sample and internal standard were 5.05% and 4.73%, respectively, using *Solanum* as standard and GPB.

$2C = 0.87 \pm 0.004$  pg, PI FCM. New Zealand, South Island, Southland Land District, east end of Colac Bay, near Riverton,  $46^{\circ}21'41.6''S$ ,  $167^{\circ}56'55.3''E$ , 28 Jan 2024, A. Morales-Alonso & al. 16NZ-AMA24 (CHR, UPOS).

#### *Carex secta* Boott

The CVs of sample and internal standard were 4.26% and 4.61%, respectively, using *Solanum* as standard and GPB.

$2C = 0.86 \pm 0.008$  pg, PI FCM. New Zealand, South Island, West Coast, Westland Land District, near Paroa Beach, road to Hokitika,  $42^{\circ}31'11.2''S$ ,  $171^{\circ}09'47.6''E$ , 03 Feb 2024, A. Morales-Alonso & P. Jiménez-Mejías 84NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.50% and 3.73%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.000$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Castle Hill Basin, Prebble Hill,  $43^{\circ}03.1''S$ ,  $171^{\circ}44'25.2''E$ , 29 Feb 2024, A. Morales-Alonso & K. Ford 172NZ-AMA24 (CHR, UPOS).

#### *Carex tenuiculmis* (Petrie) Heenan & de Lange

The CVs of sample and internal standard were 3.71% and 2.30%, respectively, using *Solanum* as standard and GPB.

$2C = 0.76 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lake Coleridge area, Acheron River gorge,  $43^{\circ}21'38.5''S$ ,  $171^{\circ}37'28.7''E$ , 07 Mar 2020, S. Martín-Bravo, 228SMB-NZ (CHR, UPOS).

The CVs of sample and internal standard were 4.49% and 3.00%, respectively, using *Solanum* as standard and GPB.

$2C = 0.77 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Ashburton Lakes, Hakatere Conservation Area, Spider Lake,  $43^{\circ}36'24.9''S$ ,  $171^{\circ}07'10.0''E$ , 05 Mar 2020, S. Martín-Bravo & K. Ford 220SMB-NZ (CHR, UPOS).

The CVs of sample and internal standard were 4.69% and 3.59%, respectively, using *Solanum* as standard and GPB.

$2C = 0.79 \pm 0.001$  pg, PI FCM. New Zealand, South Island, Canterbury Land District, Lake Coleridge area, Acheron River gorge,  $43^{\circ}21'38.5''S$ ,  $171^{\circ}37'28.7''E$ , 07 Mar 2020, S. Martín-Bravo & K. Ford 228SMB-NZ (CHR, UPOS).

### Disticha Clade

#### *Carex maritima* Gunnerus

The CVs of sample and internal standard were 3.94% and 3.33%, respectively, using *Solanum* as standard and GPB.

$2C = 0.85 \pm 0.005$  pg, PI FCM. Switzerland, Canton of Valais, Zermatt, Matterhorn glacier,  $45^{\circ}58'26.9''N$ ,  $07^{\circ}41'49.3''E$ , 23 Aug 2023, R. Sánchez-Villegas & M. Luceño 47RSV23 (UPOS).

#### *Carex melanocystis* É.Desv.

The CVs of sample and internal standard were 4.57% and 3.32%, respectively, using *Solanum* as standard and LB01.

$2C = 0.85 \pm 0.009$  pg, PI FCM. Chile, Coquimbo, Doña Ana Range, Minera El Indio,  $29^{\circ}48'54.8''S$ ,  $70^{\circ}01'19.6''W$ , 13 Jan 2023, P. Muñoz-Schüler & al. 24.PMS.ENE (CONC, UPOS).

### Echinata Clade

*Carex echinata* Murray

The CVs of sample and internal standard were 4.58% and 4.26%, respectively, using *Solanum* as standard and GPB.

$2C = 1.01 \pm 0.001$  pg, PI FCM. New Zealand, South Island, West Coast, Westland Land District, Arthur's Pass Road, 42° 54'26.6"S, 171°33'33.9"E, 05 Feb 2024, A. Morales-Alonso & P.Jiménez-Mejías 115NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 5.39% and 3.68%, respectively, using *Solanum* as standard and GPB.

$2C = 1.07 \pm 0.008$  pg, PI FCM. New Zealand, South Island, Tasman Land District, 1000 Acre Plateau, Matiri alley, 41°36'23.8"S, 172°20'20.6"E, 07 Feb 2024, A. Morales-Alonso & al. 129NZ-AMA24 (CHR, UPOS).

The CVs of sample and internal standard were 4.09% and 3.84%, respectively, using *Solanum* as standard and GPB.

$2C = 0.88 \pm 0.002$  pg, PI FCM. Switzerland, Canton of Valais, Fieschertal, Märjelensee, Märjalen-Stausee trail, 46°26'23.0"N, 08°05'49.0"E, 16 Aug 2023, R. Sánchez-Villegas & M. Luceño 24RSV23 (UPOS).

*Carex foetida* All.

The CVs of sample and internal standard were 4.58% and 4.55%, respectively, using *Solanum* as standard and GPB.

$2C = 0.96 \pm 0.004$  pg, PI FCM. Switzerland, Canton of Valais, Fieschertal, Vordersee, Märjalen-Stausee trail, 46°26'35.0"N, 08°06'35.0"E, 16 Aug 2023, R. Sánchez-Villegas & M. Luceño 18RSV23 (UPOS).

## IAPT chromosome data 46/2

Anahit G. Ghukasyan,\* Aghunik V. Harutyunyan & Lora Yu. Martirosyan

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Plant material for karyological study was obtained both from seeds germinated under laboratory conditions at the A. Takhtajan Institute of Botany NAS RA, and from seedlings cultivated in the living collection of wild ornamental plants at the Yerevan Botanical Garden.

\* Rare in Armenia. Included in the Red Data Book of Armenia (2010) under the category VU.

### ASPARAGACEAE

*Bellevalia pycnantha* (K.Koch) Losinsk.

$2n = 16$ , CHN. Armenia, Selim Pass, alpine meadow, in marshy areas, 2400 m, 15 May 2014, E.Tz. Gabrielyan s.n. (ERE 192587).

### ASTERACEAE

*Centaurea cheiranthifolia* Willd.

$2n = 18$ , CHN. Armenia, Kotayk Province, vicinity of Fantan village, north-eastern slope of Mount Gutanasar, 2042 m, 40°54'

41"N, 44°25'46"E, 09 Jun 2024, A.G. Ghukasyan, Zh.H. Hovakimyan s.n. (ERE 202738); Armenia, Shirak Province, vicinity of Ardenis village, along the Ardenis to Aghvorik road, moist meadow, 2000 m, 41°03'45"N, 43°45'45"E, 09 Jul 2025, A.G. Ghukasyan, Zh.H. Hovakimyan s.n. (ERE 203284).

*Centaurea triumfettii* All.

$2n = 18$ , CHN. Armenia, Aragatsotn Province, vicinity of Yernjatap village, Mount Ara, north-east slope, 1996 m, 40°25'18"N, 44°25'46"E, 09 Jun 2024, A.G. Ghukasyan s.n. (ERE 202740).

*Cirsium arvense* (L.) Scop.

$2n = 34$ , CHN. Armenia, Gegharkunik Province, vicinity of Madina village, meadow, 2000 m, 40°04'15"N, 44°16'05"E, 10 Jun 2021, A.G. Ghukasyan, G.M. Fayvush s.n. (ERE 203278).

*Leucanthemum vulgare* Lam.

$2n = 18$ , CHN. Armenia, Kotayk Province, vicinity of Fantan village, north-eastern slope of Mount Gutanasar, 2042 m, 40°54'41"N, 44°25'46"E, 09 Jun 2024, A.G. Ghukasyan, Zh.H. Hovakimyan s.n. (ERE 202741).

\**Psephellus erivanensis* Lipsky

$2n = 32$ , CHN. Armenia, Ararat Province, Erebuni State Reserve, 1300 m, 40°08'53.24"N, 44°35'58.42"E, 26 Jun 2024, A.V. Harutyunyan s.n. (ERE 203276).

### EUPHORBIACEAE

*Euphorbia heteradena* Jaub. & Spach

$2n = 28$ , CHN. Armenia, Ararat region, near Narek village, road to Gelaysor, dry slopes, 1300 m, 04 Aug 2022, J.A. Akopian, A.G. Ghukasyan, L.Yu. Martirosyan s.n. (ERE 203282).

### LAMIACEAE

*Nepeta betonicifolia* C.A.Mey.

$2n = 18$ , CHN. Armenia, Aragatsotn Province, vicinity of Yernjatap village, Mount Ara, north-east slope, 1930 m, 40°25'10"N, 44°25'49"E, 27 Jun 2023, A.G. Ghukasyan s.n. (ERE 203243); Armenia, Kotayk Province, vicinity of Fantan village, north-eastern slope of Mount Gutanasar, 2042 m, 40°54'41"N, 44°25'46"E, 09 Jun 2024, A.G. Ghukasyan, Zh.H. Hovakimyan s.n. (ERE 203244, 203245).

*Salvia hydrangea* DC. ex Benth.

$2n = 14$ , CHN. Armenia, Ararat Province, vicinity of Vedi town, road to Mount Erakh, 1200 m, 44°42'36"N, 44°42'36"E, 11 Jun 2025, A.G. Ghukasyan, Zh.H. Hovakimyan s.n. (ERE 203280, 203281).

*Salvia limbata* C.A.Mey.

$2n = 22$ , CHN. Armenia, Ararat Province, vicinity of Vedi town, road to Mount Erakh, 1200 m, 44°42'36"N, 44°42'36"E, 11 Jun 2025, A.G. Ghukasyan, Zh.H. Hovakimyan s.n. (ERE 203255, 203256, 203257).

*Salvia verbascifolia* M.Bieb.

$2n = 22$ , CHN. Armenia, Lori Province, vicinity of Shirakamut village, 1820 m, 40°47'47"N, 44°23'03"E, 21 May 2025, A.G. Ghukasyan, Zh.H. Hovakimyan, L.Yu. Martirosyan s.n. (ERE 203270).

*Salvia verticillata* L.

$2n = 16$ , CHN. Armenia, Lori Province, vicinity of Ursasar village, foot of Mount Ursasar, 1635 m, 41°01'51"N, 44°14'56"E,