

Supplementary Data

Table S1. UPLC-UV-MS identification of possible compounds from *Rubia cordifolia* Linn. root extract prepared in methanol. ID source: DBSearch.

| No. | Name | Formula | Score | Mass | CAS | RT |
|-----|------------------------------|-----------|-------|----------|------------|--------|
| 1 | Ricinoleic acid | C18H34O3 | 99.67 | 298.2507 | 5323-95-5 | 15.677 |
| 2 | Armevavine | C19H23NO3 | 99.54 | 313.168 | 524-20-9 | 16.405 |
| 3 | Erysotrine | C19H23NO3 | 99.54 | 313.168 | 27740-43-8 | 16.405 |
| 4 | Ethylmorphine | C19H23NO3 | 99.54 | 313.168 | 76-58-4 | 16.405 |
| 5 | Laurifine | C19H23NO3 | 99.54 | 313.168 | 56261-28-0 | 16.405 |
| 6 | Cryptotanshinone | C19H23O3 | 99.53 | 296.1415 | 35825-57-1 | 16.405 |
| 7 | 5-Deoxystrigol | C19H22O5 | 99.46 | 330.1468 | | 11.167 |
| 8 | Gibberellin A5 | C19H22O5 | 99.46 | 330.1468 | | 11.167 |
| 9 | Gibberellin A51-catabolite | C19H22O5 | 99.46 | 330.1468 | | 11.167 |
| 10 | Gibberellin A7 | C19H22O5 | 99.46 | 330.1468 | | 11.167 |
| 11 | Podolide | C19H22O5 | 99.46 | 330.1468 | 55786-36-2 | 11.167 |
| 12 | Cyperine | C15H16O4 | 99.35 | 260.1051 | 33716-82-4 | 14.45 |
| 13 | Hemigossypol | C15H16O4 | 99.35 | 260.1051 | | 14.45 |
| 14 | Homobaldrinal | C15H16O4 | 99.35 | 260.1051 | 67910-07-0 | 14.45 |
| 15 | Linderane | C15H16O4 | 99.35 | 260.1051 | 13476-25-0 | 14.45 |
| 16 | Pergillin | C15H16O4 | 99.35 | 260.1051 | 74798-20-2 | 14.45 |
| 17 | Arachidic acid | C20H40O2 | 99.23 | 312.303 | 506-30-9 | 17.781 |
| 18 | Phytanic acid | C20H40O2 | 99.23 | 312.303 | 14721-66-5 | 17.781 |
| 19 | 1,3,6,8-Naphthalenetetrol | C10H8O4 | 99.14 | 192.0424 | 18512-30-6 | 9.736 |
| 20 | 3,4-Dehydro-6-hydroxymellein | C10H8O4 | 99.14 | 192.0424 | | 9.736 |
| 21 | Acamelin | C10H8O4 | 99.14 | 192.0424 | 74161-27-6 | 9.736 |
| 22 | Anemonin | C10H8O4 | 99.14 | 192.0424 | 508-44-1 | 9.736 |
| 23 | Isoscopoletin | C10H8O4 | 99.14 | 192.0424 | 776-86-3 | 9.736 |
| 24 | Naphthazarin | C10H8O4 | 99.14 | 192.0424 | 475-38-7 | 9.736 |
| 25 | Scopoletin | C10H8O4 | 99.14 | 192.0424 | 92-61-5 | 9.736 |
| 26 | Butyl octadecanoate | C22H44O2 | 99.03 | 340.3344 | 123-95-5 | 19.394 |
| 27 | Docosanoic acid | C22H44O2 | 99.03 | 340.3344 | 112-85-6 | 19.394 |
| 28 | 2,3-Pentanedione | C5H8O2 | 98.96 | 100.0524 | 600-14-6 | 2.174 |
| 29 | 3-Methylbutyrolactone | C5H8O2 | 98.96 | 100.0524 | 1679-49-8 | 2.174 |
| 30 | 5-Aminopentanoic acid | C5H11NO2 | 98.96 | 117.079 | 660-88-8 | 2.174 |
| 31 | L-Valine | C5H11NO2 | 98.96 | 117.079 | 72-18-4 | 2.174 |
| 32 | Norvaline | C5H11NO2 | 98.96 | 117.079 | 760-78-1 | 2.174 |
| 33 | Tiglic acid | C5H8O2 | 98.96 | 100.0524 | 80-59-1 | 2.174 |
| 34 | Valine | C5H11NO2 | 98.96 | 117.079 | 516-06-3 | 2.174 |
| 35 | Bombykol | C16H33O | 98.58 | 238.2294 | | 21.808 |
| 36 | 1-Acetoxy-pinorexinol | C22H24O8 | 98.51 | 416.1474 | 81426-14-4 | 10.817 |
| 37 | Lophotoxin | C22H24O8 | 98.51 | 416.1474 | 78697-56-0 | 10.817 |

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| 38 | (S)-2-Methylbutanal | C5H10O | 98.06 | 86.0729 | 1730-97-8 | 0.929 |
| 39 | 1-Penten-3-ol | C5H10O | 98.06 | 86.0729 | 616-25-1 | 0.929 |
| 40 | 2-Methylbutanal | C5H10O | 98.06 | 86.0729 | 96-17-3 | 0.929 |
| 41 | Cyclopentanol | C5H10O | 98.06 | 86.0729 | 96-41-3 | 0.929 |
| 42 | pentan-2-one | C5H10O | 98.06 | 86.0729 | | 0.929 |
| 43 | Stearic acid | C18H39O2 | 98.04 | 284.2718 | 57-11-4 | 16.174 |
| 44 | Aspulvinone E | C17H15O5 | 98 | 296.0687 | 49637-60-7 | 11.387 |
| 45 | Melicopine | C17H15NO5 | 98 | 313.0952 | 568-01-4 | 11.387 |
| 46 | Butyl dodecanoate | C16H32O2 | 97.45 | 256.241 | 106-18-3 | 14.591 |
| 47 | Octyl octanoate | C16H32O2 | 97.45 | 256.241 | 2306-88-9 | 14.591 |
| 48 | Palmitic acid | C16H32O2 | 97.45 | 256.241 | 57-10-3 | 14.591 |
| 49 | Decyl butanoate | C14H28O2 | 97.43 | 228.2089 | 01-09-54 | 12.986 |
| 50 | Dicumarol | C19H15O6 | 97.43 | 336.0639 | 66-76-2 | 13.541 |
| 51 | Myristic acid | C14H28O2 | 97.43 | 228.2089 | 544-63-8 | 12.986 |
| 52 | Tetracenomycin D1 | C19H15O6 | 97.43 | 336.0639 | | 13.541 |
| 53 | Protodioscin | C51H84O22 | 97.2 | 1048.547 | 55056-80-9 | 11.356 |
| 54 | Trigonelloside C | C51H84O22 | 97.2 | 1048.547 | 60478-69-5 | 11.356 |
| 55 | Cubebin | C20H20O6 | 97.08 | 356.1264 | 18423-69-3 | 10.838 |
| 56 | Kievitone | C20H20O6 | 97.08 | 356.1264 | | 10.838 |
| 57 | Leachianone G | C20H20O6 | 97.08 | 356.1264 | | 10.838 |
| 58 | Plaunol B | C20H20O6 | 97.08 | 356.1264 | 69749-00-4 | 10.838 |
| 59 | alpha-Irone | C14H22O | 96.98 | 206.1665 | 79-69-6 | 1.221 |
| 60 | 1-Cyclohexene carboxylic acid | C7H10O2 | 96.55 | 126.0683 | 636-82-8 | 1.085 |
| 61 | L-Thyronine | C15 H15 N O4 | 94.66 | 273.1012 | 1596-67-4 | 7.863 |
| 62 | Angustine | C20H15N3O | 94.5 | 313.1204 | 40041-96-1 | 11.167 |
| 63 | Ochotensine | C21H21NO4 | 92.77 | 351.1473 | 4959-88-0 | 11.532 |
| 64 | Caseadine | C20H23NO4 | 92.2 | 341.1632 | 34413-12-2 | 9.115 |
| 65 | Isocorydine(+) | C20H23NO4 | 92.2 | 341.1632 | 475-67-2 | 9.115 |
| 66 | (-)-Phaseollinisoflavan | C20H20O4 | 92.16 | 324.1367 | | 9.115 |
| 67 | Glabranin | C20H20O4 | 92.16 | 324.1367 | | 9.115 |
| 68 | Glabridin | C20H20O4 | 92.16 | 324.1367 | | 9.115 |
| 69 | Isobavachalcone | C20H20O4 | 92.16 | 324.1367 | | 9.115 |
| 70 | Moracin I | C20H20O4 | 92.16 | 324.1367 | 73338-88-2 | 9.115 |
| 71 | Otobain | C20H20O4 | 92.16 | 324.1367 | 3738-01-0 | 9.115 |
| 72 | Spathelia bischromene | C20H20O4 | 92.16 | 324.1367 | 34411-93-3 | 9.115 |
| 73 | Cleomiscosin A | C20H18O8 | 91.42 | 386.102 | 76948-72-6 | 11.946 |
| 74 | Daphneticin | C20H18O8 | 91.42 | 386.102 | 83327-22-4 | 11.946 |
| 75 | Diferulic acid | C20H18O8 | 91.42 | 386.102 | 436-96-4 | 11.946 |
| 76 | Irisflorentin | C20H18O8 | 91.42 | 386.102 | | 11.946 |
| 77 | (-)-8- Demethylmaritidine | C16H19NO3 | 86.45 | 273.1364 | | 14.91 |
| 78 | 4'-O- Methylnorbelladine | C16H19NO3 | 86.45 | 273.1364 | | 14.91 |

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| 79 | 7,4'-Dihydroxy-8-methylflavan | C16H16O3 | 86.45 | 256.1098 | | 14.91 |
| 80 | Broussin | C16H16O3 | 86.45 | 256.1098 | | 14.91 |
| 81 | Lunacrine | C16H19NO3 | 86.45 | 273.1364 | 82-40-6 | 14.91 |
| 82 | Orchinol | C16H16O3 | 86.45 | 256.1098 | 41060-20-2 | 14.91 |
| 83 | Pterostilbene | C16H16O3 | 86.45 | 256.1098 | 537-42-8 | 14.91 |
| 84 | Xenognosin A | C16H16O3 | 86.45 | 256.1098 | 76907-79-4 | 14.91 |
| 85 | β -Erythroidine | C16H19NO3 | 86.45 | 273.1364 | 466-81-9 | 14.91 |
| 86 | 9(S)-HOTrE | C18H30O3 | 85.91 | 294.2193 | 89886-42-0 | 18.656 |
| 87 | 9-OxoODE | C18H30O3 | 85.91 | 294.2193 | 54232-59-6 | 18.656 |
| 88 | Colneleic acid | C18H30O3 | 85.91 | 294.2193 | | 18.656 |
| 89 | Juvenile hormone I | C18H30O3 | 85.91 | 294.2193 | 13804-51-8 | 18.656 |
| 90 | 2-Hydroxypyridine | C5H5NO | 85.9 | 95.0375 | 142-08-5 | 1.147 |
| 91 | Alizarin | C14H8O4 | 85.55 | 240.042 | 72-48-0 | 10.912 |
| 92 | Danthron | C14H8O4 | 85.55 | 240.042 | 117-10-2 | 10.912 |
| 93 | 7,4'-Dihydroxyflavone | C15H10O4 | 85.52 | 254.0581 | | 12.019 |
| 94 | Alizarin 2-methyl ether | C15H10O4 | 85.52 | 254.0581 | 08-11-03 | 12.019 |
| 95 | Anhydroglycinol | C15H10O4 | 85.52 | 254.0581 | | 12.019 |
| 96 | Chrysin | C15H10O4 | 85.52 | 254.0581 | 480-40-0 | 12.019 |
| 97 | Daidzein | C15H10O4 | 85.52 | 254.0581 | 486-66-8 | 12.019 |
| 98 | Hispidol | C15H10O4 | 85.52 | 254.0581 | | 12.019 |
| 99 | Primetin | C15H10O4 | 85.52 | 254.0581 | | 12.019 |
| 100 | Rubiadin | C15H10O4 | 85.52 | 254.0581 | 117-02-2 | 12.019 |
| 101 | (-)-Morphine | C17H19NO3 | 84.43 | 285.1363 | | 15.27 |
| 102 | (S)-Coclaurine | C17H19NO3 | 84.43 | 285.1363 | 486-39-5 | 15.27 |
| 103 | Cherylline | C17H19NO3 | 84.43 | 285.1363 | 23367-61-5 | 15.27 |
| 104 | Erysonine | C17H19NO3 | 84.43 | 285.1363 | 03-05-90 | 15.27 |
| 105 | Morphine | C17H19NO3 | 84.43 | 285.1363 | 57-27-2 | 15.27 |
| 106 | Narwedine | C17H19NO3 | 84.43 | 285.1363 | 510-77-0 | 15.27 |
| 107 | Norcodeine | C17H19NO3 | 84.43 | 285.1363 | 467-15-2 | 15.27 |
| 108 | Piperine | C17H19NO3 | 84.43 | 285.1363 | 94-62-2 | 15.27 |
| 109 | 11-Deoxylandomycinone | C19H14O5 | 83.96 | 322.0857 | | 11.878 |
| 110 | Tetrangomycin | C19 H14 O5 | 83.96 | 322.0857 | 08-08-51 | 11.878 |
| 111 | Isosamidin | C21H22O7 | 82.58 | 386.1368 | 53023-18-0 | 10.853 |
| 112 | Pteryxin | C21H22O7 | 82.58 | 386.1368 | 17944-23-9 | 10.853 |
| 113 | Samidin | C21H22O7 | 82.58 | 386.1368 | 477-33-8 | 10.853 |
| 114 | Chloroquine | C18H26ClN3 | 69.98 | 319.1817 | 54-05-7 | 9.115 |