

SUPPORTING INFORMATION

Actinobacteria isolated from an underground lake and moonmilk speleothem from the biggest conglomeratic Karstic cave in Siberia as sources of novel biologically active compounds

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S4 Table. Number and characteristics of main peaks and compounds produced by *Streptomyces sp. IB 2014 /I /78-8.*

| N | RT, min | Detected mass, m/z | Accurate mass (M-H+) | UV-maxima, λ | Dictionary of Natural Products | | | | | Fraction N |
|----|---------|--------------------|----------------------|----------------------|--------------------------------|------------|---------------------------------|----------------|---------------------------------|------------|
| | | | | | N hits in DNP | CRC-number | Compound (Accurate mass) | Bio-importance | Source | |
| 1 | 0,55 | 419,1532 | 418,1452 | 200, 286 | 0 | | | | | 2 |
| 2 | 0,68 | 226,1545 | 225,1465 | 200, 274 | 0 | | | | | 2 |
| 3 | 0,68 | 235,1185 | 234,1105 | 200, 270 | 0 | | | | | 2 |
| 4 | 0,81 | 254,1607 | 253,1527 | 200, 270 | 0 | | | | | 2 |
| 5 | 0,91 | 251,1497 | 250,1417 | 200, 230, 280 | 0 | | | | | 2 |
| 6 | 1,31 | 235,1074 | 234,0994 | 200, 230, 270 | 1 | MOS98-O | Sesquichamaenol (AM 234, 16198) | | <i>Cedrelopsis microfoliata</i> | 6 |
| 7 | 1,54 | 201,1232 | 200,1152 | 200, 280 | 0 | | | | | 6 |
| 8 | 1,67 | 211,1075 | 210,0995 | 200, 277 | 0 | | | | | 6 |
| 9 | 1,67 | 228,1338 | 227,1258 | 200, 276 | 0 | | | | | 6 |
| 10 | 1,67 | 709,3434 | 708,3354 | 200, 278 | 0 | | | | | 6 |
| 11 | 1,76 | 215,1387 | 214,1307 | 200, 260 | 0 | | | | | 6 |
| 12 | 1,76 | 482,1809 | 481,1729 | 200, 260 | 0 | | | | | 6 |
| 13 | 1,76 | 696,312 | 695,304 | 200, 260 | 0 | | | | | 6 |
| 14 | 1,82 | 285,1342 | 284,1262 | 206 | 0 | | | | | 2 |
| 15 | 2,01 | 296,1356 | 295,1276 | 208, 268 | 0 | | | | | 6 |
| 16 | 2,5 | 234,1347 | 233,1267 | 200, 220, 275 | 0 | | | | | 6 |

| | | | | | | | | | | | |
|----|------|-----------|----------|-------------------|---|------------------------|--|--|--|--|---------|
| 17 | 2,5 | 261,1228 | 260,1148 | 200, 220, 275 | 0 | | | | | | 6,11,12 |
| 18 | 2,8 | 279,1341 | 278,1261 | 200, 270-190, 350 | 1 | OXQ89-J | Monodictysin B (AM 278,115425) | Inhibitor of cytochrome P450 1A activity | <i>Monodictys putredinis</i> | | 2,6 |
| 19 | 2,93 | 315,1332 | 314,1252 | 218, 260, 350 | 0 | | | | | | 11 |
| 20 | 3,9 | 211,1436 | 210,1356 | 218 | 0 | | | | | | 11 |
| 21 | 4,4 | 245,1279 | 244,1199 | 216 | 0 | | | | | | 11 |
| 22 | 4,8 | 185,0804 | 184,0724 | 202, 290 | 1 | MYC84-X | 4-Hydroxy-6-(2-hydroxypropyl)-3-methyl-2H-pyran-2-one (AM 184,07356) | | <i>Chaetomium quadrangulatum</i> | | 11 |
| 23 | 5 | 199,1322 | 198,1242 | 218, 270, 350 | 0 | | | | | | 11 |
| 24 | 5 | 225,1482 | 224,1402 | 212, 260 | 0 | | | | | | 11 |
| 25 | 5 | 286,1544 | 285,1464 | 218, 270, 350 | 0 | | | | | | 11 |
| 26 | 5,06 | 373,12790 | 372,1199 | 212, 260 | 2 | 1) LMV44-L; 2) BFD83-H | 1) Quinic acid - 4-O-(3,4,5-Trihydroxybenzoyl) (AM 344,07435); 2) 2',4',5-Trihydroxy-7-methoxy-3-prenylflavone (368,12599) | 1-; 2- | 1) <i>Quercus stenophylla</i> ; 2) <i>Artocarpus integer</i> and <i>Artocarpus elasticus</i> | | 11 |
| 27 | 5,11 | 209,1532 | 208,1452 | 218 | 0 | | | | | | 11 |
| 28 | 5,11 | 227,1638 | 226,1558 | 218 | 0 | | | | | | 11 |
| 29 | 5,22 | 247,1447 | 246,1367 | 200-220 | 0 | | | | | | 11 |
| 30 | 5,33 | 223,1328 | 222,1248 | 214, 274 | 0 | | | | | | 12 |
| 31 | 5,33 | 516,1781 | 515,1701 | 214, 274 | 0 | | | | | | 12 |

| | | | | | | | | | | |
|----|------|----------|----------|---------------|---|---------|--|------------------------------------|--|-------|
| 32 | 5,55 | 217,1438 | 216,1358 | 218, 280 | 1 | BBT06-M | 1,2,3,4- Tetrahydro-1-methyl-B-carboline; 5-Methoxy (AM 216,126263) | Alkaloid | <i>Banisteriopsis argentea</i> (Malphiaceae) | 11,12 |
| 33 | 5,55 | 433,2802 | 432,2722 | 218 | 0 | | | | | 12 |
| 34 | 5,68 | 255,0657 | 254,0577 | 200, 248, 302 | 0 | | | | | 12 |
| 35 | 5,74 | 227,1763 | 226,1683 | 190-200 | 0 | | | | | 11,12 |
| 36 | 5,87 | 227,1752 | 226,1672 | 218, 270 | 0 | | | | | 11 |
| 37 | 6,08 | 439,2543 | 438,2463 | 218, 265 | 0 | | | | | 11 |
| 38 | 6,08 | 704,1836 | 703,1756 | 218, 270 | 0 | | | | | 11 |
| 39 | 6,21 | 334,1548 | 333,1468 | 216, 270 | 1 | NRW95-L | Cyclo(phenylalanyltryptophyl); 3S, 6S-form (AM 333,147727) | Plant growth regulator | <i>Penicillium sp. and Aspergillus sp.</i> | 12 |
| 40 | 6,38 | 555,1504 | 554,1424 | 214 | 1 | QGS30-C | Stylissazole B (AM 554,133796) | | <i>marine sponge Stylissa carteri</i> | 11,12 |
| 41 | 6,43 | 295,1442 | 294,1362 | 200, 215 | 0 | | | | | 12 |
| 42 | 6,91 | 440,1616 | 439,1536 | 220, 280 | 0 | | | | | 12 |
| 43 | 7,07 | 698,2234 | 697,2154 | 220, 270 | 0 | | | | | 12 |
| 44 | 7,11 | 370,1277 | 369,1197 | 220, 270 | 0 | | | | | 11 |
| 45 | 7,15 | 227,0914 | 226,0834 | 217, 264 | 1 | GDJ47-S | 2,4-Dihydroxy-3,5,6-trimethylbenzenecarbothioic acid (AM 266,066365) | Antibacterial and antifungal agent | <i>Mortierella vinacea NRRL 22986</i> | 15 |
| 46 | 7,26 | 315,1335 | 314,1255 | 220, 420 | 0 | | | | | 11 |
| 47 | 7,26 | 461,3263 | 460,3183 | 220 | 1 | FKY31-S | Ergosta-7,22-diene-3,5,6,9,14-pentol; 6-ketone (AM 460,318875) | | <i>Constit. of Lentinus edodes (shiitake), Hypsizygus marmoreus (bunashimeji), Pleurotus</i> | 15 |

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|----|------|----------|----------|----------|---|----------------------------------|--|---|---|--------|
| | | | | | | | | | <i>ostreatus (oyster mushroom) and Pholiota nameko (nameko)</i> | |
| 48 | 7,26 | 957,6644 | 956,6564 | 220 | 0 | | | | | 15 |
| 49 | 7,27 | 493,3153 | 492,3073 | 220 | 0 | | | | | 12 |
| 50 | 7,27 | 971,645 | 970,637 | 220 | 0 | | | | | 12 |
| 51 | 7,35 | 461,3258 | 460,3178 | 220, 270 | 0 | | | | | 12 |
| 52 | 7,35 | 554,18 | 553,172 | 220, 270 | 1 | NPB34-D | Gyrophoric acid; 4-Me ether, L-alanine amide (AM 553,158414) | Inhibitor of diacylglycerol acyltransferase. Claimed antilipaemic agent | | 12 |
| 53 | 7,35 | 957,6646 | 956,6566 | 220, 270 | 0 | | | | | 12 |
| 54 | 7,38 | 259,1544 | 258,1464 | 220 | 0 | | | | | 15 |
| 55 | 7,48 | 428,3158 | 427,3078 | 220, 270 | 0 | | | | | 12 |
| 56 | 7,48 | 699,2305 | 698,2225 | 220, 270 | 2 | 1) ORM27-F; 2) ORM28-G | 1) Nepalensinol A (AM 698,2152); 2) Nepalensinol C (AM 698,2152) | | <i>Kobresia nepalensis</i> | 12 |
| 57 | 7,53 | 225,1491 | 224,1411 | 210 | 0 | | | | | 15 |
| 58 | 7,61 | 259,154 | 258,146 | 220 | 0 | | | | | 15 |
| 59 | 7,76 | 359,1481 | 358,1401 | 220 | 3 | 1)JFS45-E; 2)FYZ17-R; 3) KKJ23-X | 1) 6,9-Dihydroxy-4-oxo-2,11(13)-pseudoguaiadien-12,8-olide (AM 358,14164); 2) 15,16-Epoxy-8-hydroxy-3,13(16),14-clerodatriene-18,6:20,12-diolide (AM 358,14164); 3) Triptolide; 14-Ketone (AM 358,14164) | 1)-; 2)-; 3) Immunosuppressant | 1) <i>Baileya multiradiata</i> ; 2) <i>Jamesoniella autumnalis</i> ; 3) <i>Tripterygium wilfordii</i> | 2,6,11 |

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|----|------|-----------|----------|---------------|---|------------------------|--|----------|--|-------|
| 60 | 7,76 | 376,1742 | 375,1662 | 220 | 0 | | | | | 11 |
| 61 | 7,76 | 398,3418 | 397,3338 | 220 | 0 | | | | | 11 |
| 62 | 7,95 | 227,1643 | 226,1563 | 220 | 0 | | | | | 15 |
| 63 | 7,97 | 553,1338 | 552,1258 | 220 | 0 | | | | | 11 |
| 64 | 8,11 | 400,3574 | 399,3494 | 220 | 0 | | | | | 11 |
| 65 | 8,11 | 759,2384 | 758,2304 | 220 | 0 | | | | | 11 |
| 66 | 8,12 | 322,1337 | 321,1257 | 220, 280 | 0 | | | | | 15 |
| 67 | 8,23 | 409,0922 | 408,0842 | 222, 270, 400 | 0 | | | | | 15 |
| 68 | 8,25 | 398,3417 | 397,3337 | 220 | 0 | | | | | 11 |
| 69 | 8,25 | 543,3974 | 542,3894 | 220 | 0 | | | | | 11 |
| 70 | 8,25 | 759,239 | 758,231 | 220 | 0 | | | | | 11 |
| 71 | 8,76 | 408,1554 | 407,1474 | 220, 370 | 0 | | | | | 15 |
| 72 | 8,77 | 425,3046 | 424,2966 | 222 | 1 | POF13-F | 3,20-Diaminopregna 2,14-dien-4-one N20-Me, N3-tigloyl (AM 424,30897) | Alkaloid | <i>Sarcococca hookeriana</i> | 17,18 |
| 73 | 8,79 | 357,1332 | 356,1252 | 222, 300 | 0 | | | | | 11 |
| 74 | 9,03 | 469,3126 | 468,3046 | 220 | 2 | 1) QNK43-R; 2) BOQ49-Z | 1) 18(13->17)-Abeo-3-hydroxy-23-oxolanosta-7,12,24-trien-26-oic acid (AM 468,32396); 2) Stoloniferone B, Ac (AM 468,32396) | 1)-:2)- | 1) <i>Abies georgei</i> ; 2) <i>Clavularia viridis</i> | 18 |
| 75 | 9,03 | 1062,5729 | 1061,565 | 220 | 1 | QQS86-P | Cyclodysidin D (AM 1061,575714) | | <i>Streptomyces sp. RV15</i> | 18 |
| 76 | 9,2 | 391,299 | 390,291 | 222 | 0 | | | | | 15 |
| 77 | 9,2 | 477,3208 | 476,3128 | 222 | 0 | | | | | 15 |
| 78 | 9,2 | 954,6619 | 953,6539 | 222 | 0 | | | | | 15 |
| 79 | 9,29 | 354,1445 | 353,1365 | 222, 275, 360 | 0 | | | | | 17 |
| 80 | 9,36 | 441,2997 | 440,2917 | 222 | 1 | QMD43-B | Chaxalactin B. 14-Deoxy (AM 440,29266) | | <i>Streptomyces sp. strain C34</i> | 15 |

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|----|-------|----------|----------|----------|---|--|--|--|---|-------|
| 81 | 9,36 | 917,6131 | 916,6051 | 222 | 0 | | | | | 15 |
| 82 | 9,42 | 393,0964 | 392,0884 | 222, 400 | 0 | | | | | 17 |
| 83 | 9,46 | 387,1797 | 386,1717 | 220 | 0 | | | | | 2 |
| 84 | 9,53 | 365,1379 | 364,1299 | 222 | 0 | | | | | 17 |
| 85 | 9,68 | 471,328 | 470,32 | 222 | 4 | 1) NKF92-E; 2) KJZ92-M; 3) JOP59-H; 4) BOQ52-V | 1)2,3-Dihydroxy-5,12-oleanadien-28-oic acid (AM 470,33961); 2) Limatulone (AM 470,33961); 3) 3,4-Seco-4(23),12-oleanadiene-3,29-dioic acid (470,33961); 4) Stoloniferone B; 22,23-Dihydro, Ac (AM 470,33961) | 1)-; 2) Ichtyotoxic, feeding inhibitor; 3)-; 4)- | 1) <i>Salvia tomentosa</i> ; 2) <i>Collisella limatula</i> ; 3) <i>Maytenus undata</i> ; 4) <i>Clavularia viridis</i> | 15 |
| 86 | 9,68 | 797,4661 | 796,4581 | 222 | 1 | CPY02-M | 3,6,16-Trihydroxycycloart-25-en-24-one; (3 β ,6 α ,16 β)-form, 3,16-Di-O-B-glucopyranoside (AM 796,46091) | | <i>Astragalus trigonus</i> | 15 |
| 87 | 9,68 | 913,5138 | 912,5058 | 222 | 0 | | | | | 15 |
| 88 | 9,77 | 423,2897 | 422,2817 | 222 | 0 | | | | | 17 |
| 89 | 10,03 | 425,3047 | 424,2967 | 222 | 0 | | | | | 17,18 |
| 90 | 10,03 | 425,3051 | 424,2971 | 222 | 0 | | | | | 15 |
| 91 | 10,09 | 440,354 | 439,346 | 222 | 0 | | | | | 12 |
| 92 | 10,13 | 391,2994 | 390,2914 | 222 | 0 | | | | | 15 |
| 93 | 10,13 | 906,6805 | 905,6725 | 222 | 0 | | | | | 15 |
| 94 | 10,16 | 443,3156 | 442,3076 | 222 | 0 | | | | | 17 |
| 95 | 10,16 | 921,6459 | 920,6379 | 222 | 0 | | | | | 17 |
| 96 | 10,16 | 1381,967 | 1380,959 | 222 | 0 | | | | | 17 |
| 97 | 10,2 | 393,0966 | 392,0886 | 222, 400 | 0 | | | | | 18 |
| 98 | 10,31 | 459,3109 | 458,3029 | 222 | 3 | 1) PVJ60-I; 2) | 1) 22-Hydroxy-25-oxo-16-scalaren-24-oic acid; 18B- | | 1) <i>Smenospongia</i> | 17 |

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|-----|-------|-----------|----------|----------|---|------------------------|---|----------------------------|---|-------|
| | | | | | | GZY73-S; 3) OFK01-D | form. 22Ac, Me ester (AM 458,303225); 2) 1,3,27-Trihydroxywitha-5,24-dienolide (AM 458,303225); 3) 1,3,7-Trihydroxywitha-5,24-dienolide (458,303225). | | <i>sp.</i> ; 2) <i>Physalis pubescens</i> , <i>Withania somnifera</i> ; 3)- | |
| 99 | 10,37 | 391,2996 | 390,2916 | 222 | 0 | | | | | 18 |
| 100 | 10,37 | 835,6221 | 834,6141 | 222 | 0 | | | | | 18 |
| 101 | 10,44 | 393,3158 | 392,3078 | 218 | 0 | | | | | 17 |
| 102 | 10,44 | 411,3266 | 410,3186 | 218 | 0 | | | | | 17 |
| 103 | 10,64 | 427,3202 | 426,3122 | 222 | 2 | 1) HGK04-O; 2) HGK05-P | 1) Stoloniferone A (AM 426,313395); 2) Stoloniferone B (426,313395) | 1) Cytotoxin; 2) Cytotoxin | 1) <i>Clavularia viridis</i> ; 2) <i>Clavularia viridis</i> | 18 |
| 104 | 10,64 | 634,3018 | 633,2938 | 222 | 0 | | | | | 18 |
| 105 | 10,64 | 906,6789 | 905,6709 | 222 | 0 | | | | | 18 |
| 106 | 10,94 | 445,3318 | 444,3238 | 222 | 0 | | | | | 18 |
| 107 | 11,07 | 423,28940 | 422,2814 | 222 | 0 | | | | | 18 |
| 108 | 11,07 | 656,39760 | 655,3896 | 222 | 0 | | | | | 18 |
| 109 | 11,8 | 520,26020 | 519,2522 | 222, 280 | 0 | | | | | 18 |
| 110 | 15,95 | 546,48750 | 545,4795 | 224 | 0 | | | | | 18 |
| 111 | 18,39 | 391,2837 | 390,2757 | 224 | 2 | 1) PVB60-U; 2) PVK06-B | 1) Aculeatin F (390,27701); 2) Aculeatin F; 4,6-Diepimer (AM 39,27701) | | <i>Amomum aculeatum</i> | 2,6 |
| 112 | 18,39 | 803,542 | 802,534 | 224 | 0 | | | | | 2 |
| 113 | 18,41 | 1097,6221 | 1096,614 | 224 | 0 | | | | | 17,18 |
| 114 | 18,41 | 1114,6514 | 1113,643 | 224 | 0 | | | | | 17,18 |
| 115 | 18,41 | 1259,637 | 1258,629 | 224 | 0 | | | | | 17,18 |
| 116 | 19,04 | 1128,6698 | 1127,662 | 224 | 0 | | | | | 15 |
| 117 | 19,05 | 1128,6739 | 1127,666 | 224 | 0 | | | | | 17,18 |

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|-----|-------|-----------|----------|-----|---|--|--|--|--|-------|
| 118 | 19,06 | 702,2126 | 701,2046 | 224 | 0 | | | | | 2 |
| 119 | 19,06 | 1128,6664 | 1127,658 | 224 | 0 | | | | | 2 |
| 120 | 19,67 | 1142,6843 | 1141,676 | 224 | 0 | | | | | 17,18 |
| 121 | 19,68 | 1259,6843 | 1258,676 | 224 | 0 | | | | | 18 |
| 122 | 20,34 | 663,4523 | 662,4443 | 224 | 0 | | | | | 2 |