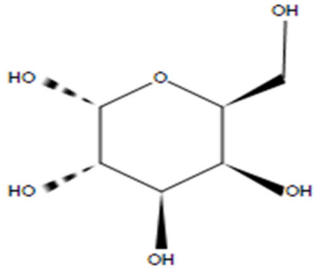
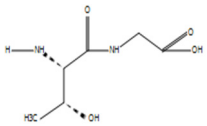
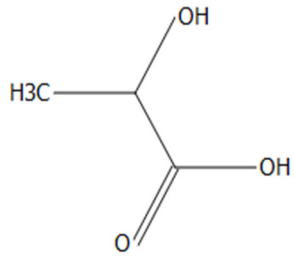
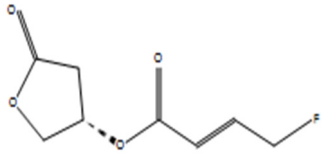
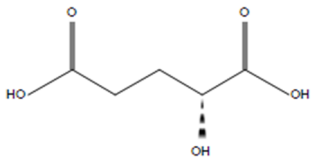
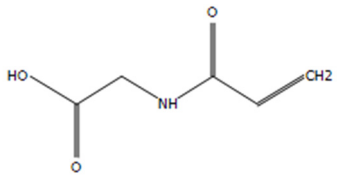
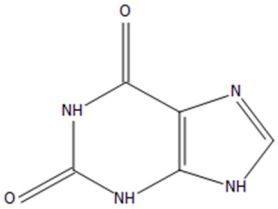
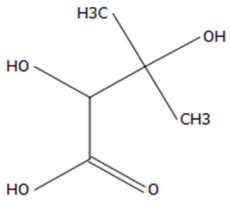
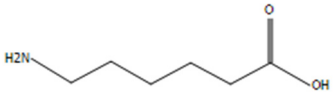
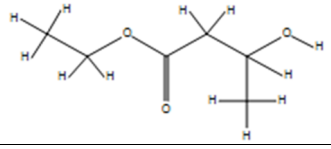
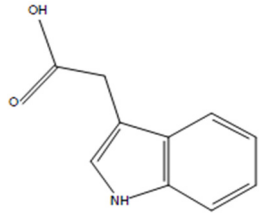
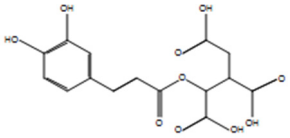
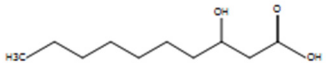
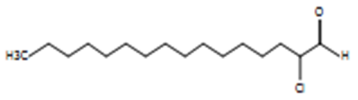
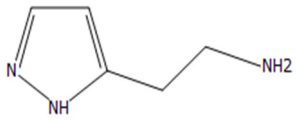
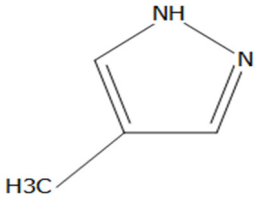
**Table S1: MTT assay revealed that CM from selected gut bacteria of *C. porosus* did not affect HeLa cell viability.**

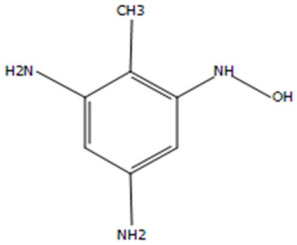
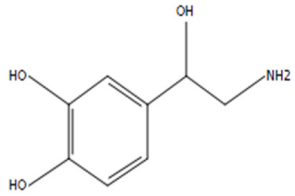
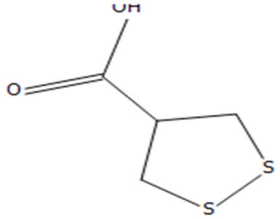
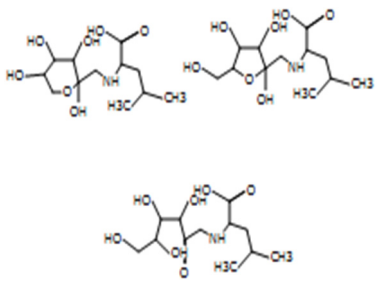
| ***Crocodylus porosus* organ** | **Bacteria** | **% cell viability inhibition using MTT assay** |
|---|---|---|
| | | **HeLa** |
| Mouth & Oesophagus | *Atlantibacter hermannii* | 4.5 |
| | *Bacillus aryabhattai* | 3 |
| | *Brevibacterium sediminis* | 6.4 |
| | *Chryseobacterium yeoncheonense* | 2.2 |
| | *Deinococcus grandis* | 4.7 |
| | *Diaphorobacter polyhydroxybutyrativorans* | 1.7 |
| | *Edwardsiella tarda* | 7.8 |
| | *Enterobacter cloacae* | 9 |
| | *Microbacterium paraoxydans* | 7.6 |
| | *Ochrobactrum intermedium* | 4 |
| | *Staphylococcus aureus* | 9.8 |
| | *Staphylococcus pasteuri* | 7.8 |
| | *Tsukamurella spumae* | 5.4 |
| Stomach | *Aeromonas salmonicida* | 8.6 |
| Small intestine | *Enterobacter cloacae* | 7 |
| | *Enterobacter tabaci* | 8.2 |
| | *Klebsiella pneumoniae subsp. Rhinoscleromatis* | 7.6 |
| | *Klebsiella quasipneumoniae subsp. Similipneumoniae* | 9.2 |
| | *Ochrobactrum oryzae* | 3.2 |
| | *Providencia alcalifaciens* | 5 |
| | *Pseudomonas guezennei* | 9.5 |
| | *Staphylococcus pasteuri* | 8.3 |
| Large intestine | *Plesiomonas shigelloides* | 4 |
| | *Proteus hauseri* | 3.3 |
| | *Proteus mirabilis* | 5.4 |
| | *Proteus vulgaris* | 2 |
| | *Providencia alcalifaciens* | 4.4 |
| Anus | *Aeromonas dhakensis* | 9.8 |
| | *Proteus mirabilis* | 6.4 |
| | *Proteus terrae* | 5.5 |

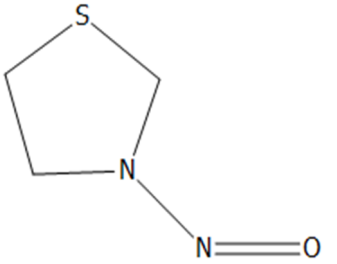
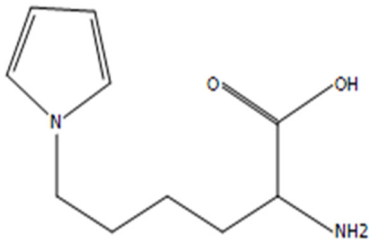
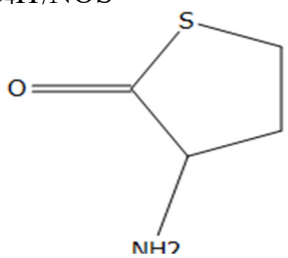
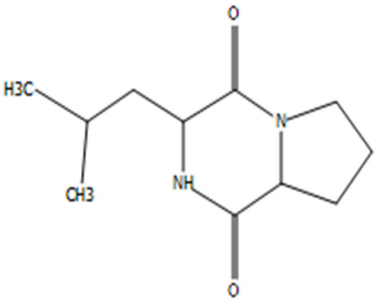
**Table S2A: Molecules that were identified from the conditioned media prepared from *P. guezennei* isolated from the duodenum of *C. porosus* through LC-MS.** The conditioned media prepared from *P. guezennei* was subjected to chloroform extraction and the extracts were subject to LC-MS analysis. The spectre generated were searched in the METLIN library in order to reveal the potential identity of the detected molecules.

| | Compound | Mass | *m/z* |
|---|---|---|---|
| 1 | **L-Galactose**<br>Molecular formula: $C_6H_{12}O_6$<br>  | 180.06 | 215.03 |
| 2 | **Threonylglycine**<br>Molecular formula: $C_6H_{12}N_2O_4$<br>  | 176.08 | 175.07 |
| 4 | **Lactic acid**<br>Molecular formula: $C_3H_6O_3$<br>  | 90.03 | 125.00 |
| 5 | **F-Honaucin A**<br>Molecular formula: $C_8H_9FO_4$<br>  | 188.05 | 187.05 |
| 6 | **D-α-Hydroxyglutaric acid**<br>Molecular formula: $C_5H_8O_5$ | 148.04 | 147.03 |

| | | | |
|---|---|---|---|
| |  | | |
| 7 | **N-Acryloylglycine**<br>Molecular formula:<br>$C_5H_7NO_3$<br>  | 129.04 | 128.04 |
| 8 | **Xanthine**<br>Molecular formula:<br>$C_5H_4N_4O_2$<br>  | 152.03 | 151.03 |
| 9 | **(R)-2,3-Dihydroxy-isovalerate**<br>Molecular formula: $C_5H_{10}O_4$<br>  | 134.06 | 133.05 |
| 10 | **Aminocaproic acid**<br>Molecular formula:<br>$C_6H_{13}NO_2$<br>  | 131.09 | 130.09 |
| 11 | **Ethyl 3-hydroxybutyrate**<br>Molecular formula: $C_6H_{12}O_3$<br>  | 132.08 | 131.07 |

| | | | |
|---|---|---|---|
| 12 | **3-Indoleacetic Acid**<br>Molecular formula:<br>$C_{10}H_9NO_2$<br>  | 175.06 | 174.06 |
| 13 | **2-Caffeoylisocitrate**<br>Molecular formula:<br>$C_{15}H_{14}O_{10}$<br>  | 354.06 | 353.05 |
| 14 | **3-hydroxy-decanoic acid**<br>Molecular formula:<br>$C_{10}H_{20}O_3$<br>  | 188.14 | 187.13 |
| 15 | **2-chloropalmitaldehyde**<br>Molecular formula:<br>$C_{16}H_{31}ClO$<br>  | 274.21 | 309.18 |
| 16 | **Betazole**<br>Molecular formula: $C_5H_9N_3$<br>  | 111.08 | 112.09 |
| 17 | **Fomepizole**<br>Molecular formula: $C_4H_6N_2$<br>  | 82.05 | 105.04 |

| | | | |
|---|---|---|---|
| 18 | **2,4-Diamino-6-hydroxylaminotoluene**<br>Molecular formula: $C_5H_5N_5$<br>  | 153.09 | 154.10 |
| 19 | **Norepinephrine (noradrenaline)**<br>Molecular formula: $C_8H_{11}NO_3$<br>  | 169.07 | 170.08 |
| 20 | **Asparagusic acid**<br>Molecular formula: $C_4H_6O_2S_2$<br>  | 149.98 | 168.01 |
| 21 | **N-(1-Deoxy-1-fructosyl)leucine**<br>Molecular formula: $C_{12}H_{23}NO_7$<br>  | 293.15 | 294.15 |
| 22 | **3-Nitrosothiazolidine**<br>Molecular formula: $C_3H_6N_2OS$ | 118.02 | 119.03 |

| | | | |
|---|---|---|---|
| |  | | |
| 24 | **L-alpha-Amino-1H-pyrrole-1-hexanoic acid**<br>Molecular formula:<br>$C_{10}H_{16}N_2O_2$<br>  | 196.12 | 197.13 |
| 25 | **Homocysteine thiolactone**<br>Molecular formula:<br>$C_4H_7NOS$<br>  | 117.03 | 118.03 |
| 26 | **L,L-Cyclo(leucylprolyl)**<br>Molecular formula:<br>$C_{11}H_{18}N_2O_2$<br>  | 210.14 | 211.14 |
| 27 | **Pseudomonine**<br>Molecular formula:$C_{16}H_{18}N_4O_4$ | 330.13 | 331.14 |

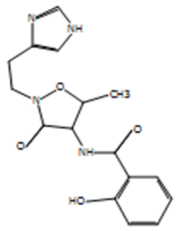
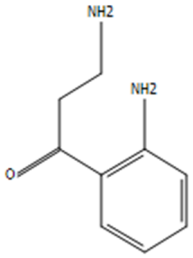
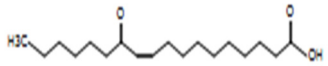
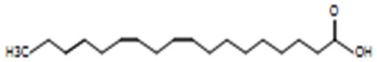
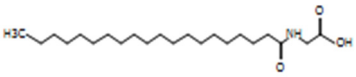
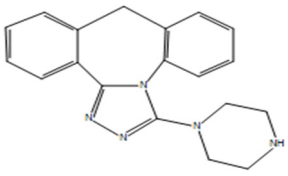
| | | | |
|---|---|---|---|
| |  | | |
| 28 | **Kynuramine**<br>Molecular formula:<br>$C_9H_{12}N_2O$<br>  | 164.09 | 165.1 |
| 29 | **12-oxo-10Z-octadecenoic acid**<br>Molecular formula:<br>$C_{18}H_{32}O_3$<br>  | 296.24 | 297.24 |
| 30 | **9Z,12Z,15E-octadecatrienoic acid**<br>Molecular formula:<br>$C_{18}H_{30}O_2$<br>  | 278.22 | 279.23 |
| 31 | **Arachidoyl glycine**<br>Molecular formula:<br>$C_{22}H_{43}NO_3$<br>  | 369.32 | 370.33 |

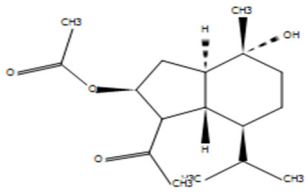
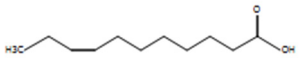
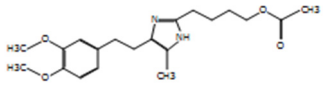
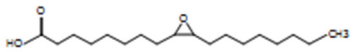
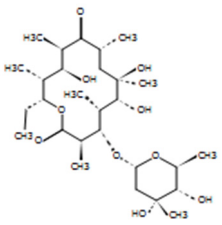
**Table S2B: Molecules that remained unidentified from the conditioned media prepared from *P. guezennei* isolated from the duodenum of *C. porosus* through LC-MS.** The conditioned media prepared from *P. guezennei* was subjected to chloroform extraction and the extracts were subject to LC-MS analysis. The spectre generated were searched in the METLIN library in order to reveal the potential identity of the detected molecules.

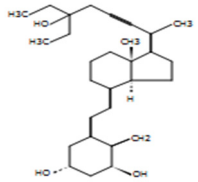
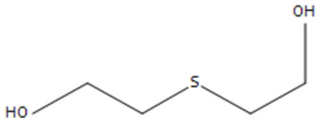
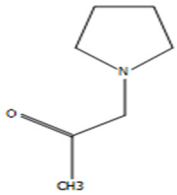
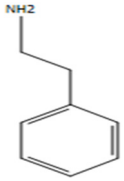
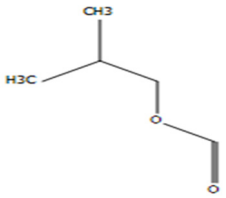
| Compound | Retention time | Molecular mass | Molecular formula |
|---|---|---|---|
| 1 | 0.649 | 271.8422 | C6 H2 Cl2 S4 |

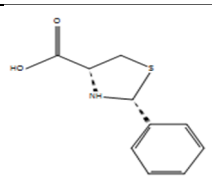
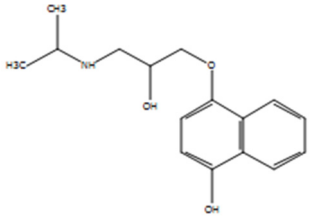
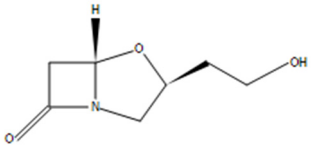
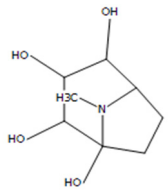
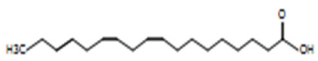
| | | | |
|---|---|---|---|
| 2 | 0.654 | 213.8924 | C4 H Cl3 N2 S |
| 3 | 0.655 | 215.8914 | C7 H Cl S3 |
| 4 | 0.794 | 147.9772 | C3 H4 N2 O S2 |
| 5 | 0.866 | 202.0463 | C4 H6 N6 O4 |
| 6 | 1.093 | 118.0291 | C5 H2 N4 |
| 7 | 13.579 | 314.2474 | C19 H30 N4 |
| 8 | 15.337 | 298.1614 | C16 H26 O3 S |
| 9 | 15.498 | 272.2366 | C16 H32 O3 |
| 10 | 15.634 | 298.1616 | C16 H26 O3 S |
| 11 | 16.328 | 312.1779 | C17 H28 O3 S |
| 12 | 16.73 | 312.1777 | C17 H28 O3 S |
| 13 | 17.016 | 354.2096 | C17 H30 N4 O2 S |
| 14 | 17.345 | 326.1935 | C14 H30 O8 |
| 15 | 17.564 | 294.1885 | C15 H26 N4 S |
| 16 | 0.657 | 119.9588 | |
| 17 | 1.002 | 175.0813 | C3 H9 N7 O2 |
| 18 | 1.038 | 131.0844 | |
| 19 | 1.048 | 137.0719 | C5 H7 N5 |
| 20 | 1.169 | 105.9904 | C3 H6 S2 |
| 21 | 1.698 | 102.0687 | C5 H10 O2 |
| 22 | 8.975 | 195.0864 | C6 H9 N7 O |
| 23 | 9.918 | 197 | C5 H11 N O S3 |
| 24 | 9.926 | 229.0873 | C11 H16 Cl N O2 |
| 25 | 12.336 | 157.1466 | C9 H19 N O |
| 26 | 16.678 | 148.0159 | C8 H4 O3 |
| 27 | 20.525 | 627.1859 | C37 H30 Cl N5 O S |
| 28 | 21.343 | 701.2069 | C38 H43 N3 S5 |
| 29 | 23.941 | 662.4465 | C44 H58 N2 O3 |

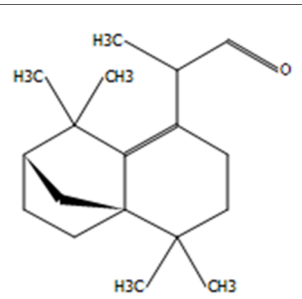
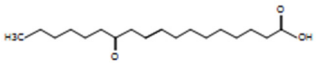
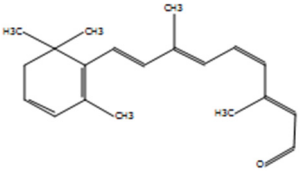
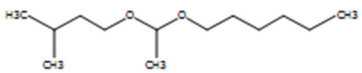
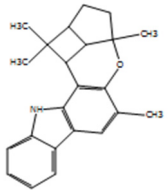
**Table S3A: Molecules that were identified from the conditioned media prepared from *P. aeruginosa* isolated from the small intestine of *C. porosus* through LC-MS.** The conditioned media prepared from *P. aeruginosa* was subjected to chloroform extraction and the extracts were subject to LC-MS analysis. The spectre generated were searched in the METLIN library in order to reveal the potential identity of the detected molecules.

| | Compound | Mass | *m/z* |
|---|---|---|---|
| 1 | **Pitrazepin**<br>Molecular formula:<br>$C_{19}H_{19}N_5$<br>  | 317.16 | 316.16 |
| 2 | **3beta-Acetoxy-4-oplopanone** | 296.20 | 331.17 |

| | | | |
|---|---|---|---|
| | Molecular formula: $C_{17}H_{28}O_4$  | | |
| 3 | **C11:1n-3** Molecular formula: $C_{11}H_{20}O_2$  | 184.15 | 183.14 |
| 4 | **O-Acetylcypholophine** Molecular formula: $C_{20}H_{28}N_2O_4$  | 360.21 | 359.20 |
| 5 | **cis-9,10-Epoxystearic acid** Molecular formula: $C_{18}H_{34}O_3$  | 298.25 | 297.24 |
| 6 | **3-O-Mycarosylerythronolide B** Molecular formula: $C_{28}H_{50}O_{10}$  | 546.34 | 545.34 |
| 7 | **(17Z)-1α,25-dihydroxy-26,27-dimethyl-17,20,22,22,23,23-hexadehydrovitamin D3 / (17Z)-1α,25-dihydroxy-26,27-dimethyl-17,20,22,22,23,23-hexadehydrocholecalciferol** | 438.31 | 473.28 |

| | | | |
|---|---|---|---|
| | Molecular formula: $C_{29}H_{42}O_3$  | | |
| 8 | **Thiodiglycol** Molecular formula: $C_4H_{10}O_2S$  | 122.04 | 123.05 |
| 9 | **1-(1-Pyrrolidinyl)-2-propanone** Molecular formula: $C_7H_{13}NO$  | 127.10 | 128.11 |
| 10 | **Phenylethylamine** Molecular formula:  | 121.09 | 122.10 |
| 11 | **2-Methylpropyl formate** Molecular formula:  | 102.07 | 103.08 |
| 12 | **(2R,4R)-2-phenylthiazolidine-4-carboxylic acid** Molecular formula: $C_{10}H_{11}NO_2S$ | 209.05 | 210.06 |

| | | | |
|---|---|---|---|
| |  | | |
| 13 | **4-Hydroxypropranolol**<br>Molecular formula:<br>$C_{16}H_{21}NO_3$<br>  | 275.15 | 276.16 |
| 14 | **2-Hydroxyethylclavam**<br>Molecular formula:<br>$C_7H_{11}NO_3$<br>  | 157.07 | 158.08 |
| 15 | **N-Methylcalystegine B2**<br>Molecular formula:<br>$C_8H_{15}NO_4$<br>  | 189.10 | 190.11 |
| 16 | **9Z,12Z,15E-octadecatrienoic acid**<br>Molecular formula:<br>$C_{18}H_{30}O_2$<br>  | 278.22 | 279.23 |
| 17 | **5-(1-oxopropan-2-yl)isolongifol-5-ene**<br>Molecular formula: $C_{18}H_{28}O$ | 260.21 | 261.22 |

| | | | |
|---|---|---|---|
| |  | | |
| 18 | **12-oxo-9E-octadecenoic acid**<br>Molecular formula: $C_{18}H_{32}O_3$<br>  | 296.24 | 319.22 |
| 19 | **11-cis-Dehydroretinal**<br>Molecular formula: $C_{20}H_{26}O$<br>  | 282.20 | 300.23 |
| 20 | **Acetaldehyde hexyl isoamyl acetal**<br>Molecular formula: $C_{13}H_{28}O_2$<br>  | 216.21 | 217.22 |
| 21 | **Bicyclomahanimbine**<br>Molecular formula: $C_{23}H_{25}NO$<br>  | 331.19 | 332.20 |
| 22 | **N-(1-Deoxy-1-fructosyl)valine**<br>Molecular formula: $C_{11}H_{21}NO_7$ | 279.13 | 297.16 |

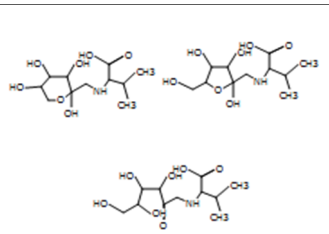
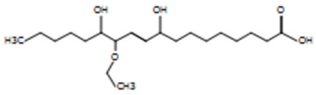
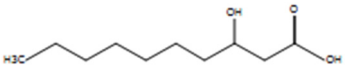
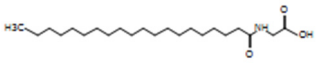
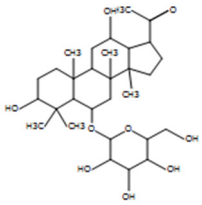
| | | | |
|---|---|---|---|
| |  | | |
| 23 | **9,13-dihydroxy-12-ethoxy-10-octadecenoic acid**<br>Molecular formula:<br>$C_{20}H_{38}O_5$<br>  | 358.27 | 359.28 |
| 24 | **3-hydroxy-decanoic acid**<br>Molecular formula:<br>$C_{10}H_{20}O_3$<br>  | 188.14 | 189.15 |
| 25 | **Arachidoyl glycine**<br>Molecular formula:<br>$C_{22}H_{43}NO_3$<br>  | 369.34 | 370.33 |
| 26 | **Notoginsenoside R10**<br>Molecular formula:<br>$C_{30}H_{50}O_9$<br>  | 554.34 | 555.35 |

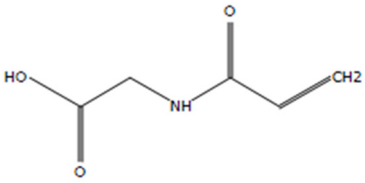
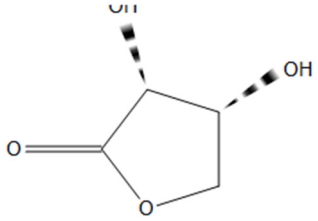
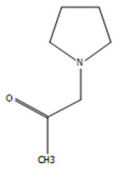
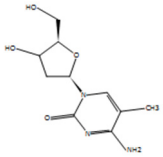
**Table S3B: Molecules that remained unidentified from the conditioned media prepared from *P. aeruginosa* isolated from the small intestine of *C. porosus* through LC-MS.** The conditioned media prepared from *P. aeruginosa* was subjected to chloroform extraction and the extracts were subject to LC-MS analysis. The spectre generated were searched in the METLIN library in order to reveal the potential identity of the detected molecules.

| Compound | Retention time | Molecular mass | Molecular formula |
|---|---|---|---|
| 1 | 0.669 | 147.9732 | |
| 2 | 11.9 | 266.0004 | C6 H6 N2 O10 |
| 3 | 12.588 | 243.1636 | C16 H21 N O |

| | | | |
|---|---|---|---|
| 4 | 13.765 | 269.1795 | C18 H23 N O |
| 5 | 15.201 | 476.3002 | C25 H40 N4 O5 |
| 6 | 15.354 | 298.1616 | C16 H26 O3 S |
| 7 | 15.581 | 549.3533 | C28 H47 N5 O6 |
| 8 | 15.628 | 298.1617 | C16 H26 O3 S |
| 9 | 16.715 | 312.1776 | C17 H28 O3 S |
| 10 | 16.797 | 1030.6403 | |
| 11 | 16.799 | 504.3318 | C27 H44 N4 O5 |
| 12 | 16.799 | 567.3278 | C27 H45 N5 O8 |
| 13 | 16.803 | 589.309 | C25 H39 N11 O6 |
| 14 | 17.34 | 326.1938 | C14 H30 O8 |
| 15 | 17.748 | 530.3468 | C29 H46 N4 O5 |
| 16 | 17.75 | 593.3429 | C29 H47 N5 O8 |
| 17 | 17.942 | 530.2915 | C32 H34 N8 |
| 18 | 18.478 | 532.3627 | C29 H48 N4 O5 |
| 19 | 18.479 | 595.3578 | C29 H49 N5 O8 |
| 20 | 19.477 | 474.2928 | C20 H34 N12 O2 |
| 21 | 19.807 | 845.9589 | |
| 22 | 20.1 | 356.1695 | C16 H28 N4 O S2 |
| 23 | 20.1 | 441.1464 | C21 H23 N5 O4 S |
| 24 | 21.398 | 384.1987 | C21 H28 N4 O S |
| 25 | 0.55 | 181.9781 | C8 H3 Cl O3 |
| 26 | 0.589 | 157.9571 | |
| 27 | 0.872 | 122.0412 | C4 H10 O2 S |
| 28 | 9.921 | 229.0874 | C11 H16 Cl N O2 |
| 29 | 10.596 | 222.0471 | C10 H10 N2 O2 S |
| 30 | 10.898 | 217.132 | C10 H19 N O4 |
| 31 | 14.23 | 307.1555 | C14 H26 Cl N O4 |
| 32 | 15.198 | 476.2991 | C24 H44 O9 |
| 33 | 15.44 | 220.0904 | C16 H12 O |
| 34 | 15.577 | 503.3457 | C26 H49 N O8 |
| 35 | 15.72 | 614.4525 | C34 H58 N6 O4 |
| 36 | 15.816 | 378.2983 | C20 H42 O6 |
| 37 | 15.866 | 334.2726 | C18 H38 O5 |
| 38 | 15.88 | 290.2454 | C16 H34 O4 |
| 39 | 16.479 | 104.0834 | C5 H12 O2 |
| 40 | 16.668 | 148.0159 | C8 H4 O3 |
| 41 | 16.686 | 305.1558 | C18 H24 Cl N O |
| 42 | 16.792 | 1030.6401 | |
| 43 | 16.797 | 504.3302 | C26 H48 O9 |
| 44 | 16.831 | 392.3139 | C21 H44 O6 |
| 45 | 16.888 | 348.2888 | C20 H44 S2 |
| 46 | 16.912 | 304.261 | C17 H36 O4 |
| 47 | 17.065 | 313.2047 | C20 H27 N O2 |
| 48 | 17.647 | 314.1675 | C23 H22 O |
| 49 | 17.747 | 547.3723 | C28 H53 N O9 |
| 50 | 17.938 | 985.5919 | |
| 51 | 18.476 | 386.3039 | C22 H42 O5 |

| | | | |
|---|---|---|---|
| 52 | 18.477 | 549.389 | C29 H51 N5 O5 |
| 53 | 19.869 | 473.3059 | C30 H39 N3 O2 |
| 54 | 20.525 | 627.1857 | C35 H37 N3 S4 |
| 55 | 21.34 | 701.2061 | C44 H32 Cl N3 O4 |
| 56 | 23.96 | 662.4483 | C34 H54 N12 O2 |

**Table S4A: Molecules that were identified from the conditioned media prepared from *A. dhakensis* isolated from large intestine of *C. porosus* through LC-MS.** The conditioned media prepared from *A. dhakensis* was subjected to chloroform extraction and the extracts were subject to LC-MS analysis. The spectre generated were searched in the METLIN library in order to reveal the potential identity of the detected molecules.

| | Compound | Mass | *m/z* |
|---|---|---|---|
| 1 | **N-Acryloylglycine**<br>Molecular formula: $C_5H_7NO_3$<br>  | 129.04 | 1280.4 |
| 2 | **Erythrono-1,4-lactone**<br>Molecular formula: $C_4H_6O_4$<br>  | 118.03 | 117.02 |
| 3 | **1-(1-Pyrrolidinyl)-2-propanone**<br>Molecular formula: $C_7H_{13}NO$<br>  | 127.10 | 128.11 |
| 4 | **5-Methyldeoxycytidine**<br>Molecular formula: $C_{10}H_{15}N_3O_4$<br>  | 241.11 | 242.11 |

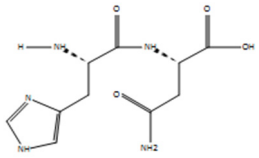
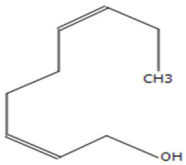
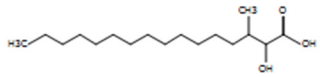
| | | | |
|---|---|---|---|
| 5 | **His Asn**<br>Molecular formula:<br>  | 269.11 | 270.12 |
| 6 | **2,6-Nonadien-1-ol**<br>Molecular formula: $C_9H_{16}O$<br>  | 140.12 | 158.15 |
| 7 | **2-hydroxy-3-methylhexadecanoic acid**<br>Molecular formula: $C_{17}H_{34}O_3$<br>  | 286.25 | 309.24 |

**Table S4B: Molecules that remained unidentified from the conditioned media prepared from *A. dhakensis* isolated from large intestine of *C. porosus* through LC-MS.** The conditioned media prepared from *A. dhakensis* was subjected to chloroform extraction and the extracts were subject to LC-MS analysis. The spectre generated were searched in the METLIN library in order to reveal the potential identity of the detected molecules.

| Compound | Retention time | Molecular mass | Molecular formula |
|---|---|---|---|
| 1 | 0.692 | 147.9733 | |
| 2 | 15.499 | 272.237 | C16 H32 O3 |
| 3 | 16.352 | 286.2518 | C17 H34 O3 |
| 4 | 17.953 | 530.2909 | C32 H34 N8 |
| 5 | 20.104 | 356.1696 | C16 H28 N4 O S2 |
| 6 | 1.023 | 131.0938 | C6 H13 N O2 |
| 7 | 8.93 | 195.0843 | C5 H13 N3 O5 |
| 8 | 9.923 | 229.0874 | C11 H16 Cl N O2 |
| 9 | 16.65 | 296.157 | C23 H20 |
| 10 | 17.945 | 985.5919 | |
| 11 | 17.948 | 990.5471 | |
| 12 | 21.108 | 390.2912 | C28 H38 O |
| 13 | 21.2 | 370.3143 | C20 H42 N4 S |