

Supplementary Material (Table)

Corallococcus soli sp. nov., a soil myxobacterium isolated from subtropical climate, Chalus county, Iran and its potential to produce secondary metabolites

Zahra Khosravi Babadi^{1,2*†}, Ronald Garcia^{3,4†}, Gholam Hossein Ebrahimpour¹, Chandra Risdian^{2,5†}, Peter Kämpfer⁶, Michael Jarek⁷, Rolf Müller^{3,4} and Joachim Wink^{*2}

¹ Department of Microbiology and Microbial Biotechnology, Faculty of Life Sciences and Biotechnology, Shahid Beheshti University GC, Tehran, Iran; Zahrankhosravi1365@yahoo.com; G-ebrahimi@sbu.ac.ir

² Microbial Strain Collection, Helmholtz Centre for Infection Research (HZI), Inhoffenstraße 7, D-38124 Braunschweig, Germany; Joachim.Wink@helmholtz-hzi.de; Chandra.Risdian@helmholtz-hzi.de

³ Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), Helmholtz Centre for Infection Research (HZI), Saarland University, Campus E8 1, 66123 Saarbrücken, Germany; ronald.garcia@helmholtz-hips.de; rolf.mueller@helmholtz-hips.de

⁴ German Centre for Infection Research (DZIF), Partner Site Hannover-Braunschweig, Braunschweig, Germany; ronald.garcia@helmholtz-hips.de; rolf.mueller@helmholtz-hips.de

⁵ Research Unit for Clean Technology, National Research and Innovation Agency (BRIN), Bandung 40135, Indonesia

⁶ Department of Applied Microbiology, Justus Liebig University Gießen, 35392 Gießen, Germany; peter.kaempfer@umwelt.uni-giessen.de

⁷ Genome Analytics, Helmholtz Centre for Infection Research (HZI), Inhoffenstraße 7, D-38124 Braunschweig, Germany; michael.jarek@helmholtz-hzi.de

⁸ Correspondence: Zahra Khosravi Babadi: Zahrankhosravi1365@yahoo.com; Joachim Wink: Joachim.Wink@helmholtz-hzi.de; Tel.: +49 531 61814223; Fax: +49 531 61819499

† Contributed equally

Table S1: Cellular fatty acid profile of strain ZKHCC1 1396^T and all type strains of *Corallococcus* species

The strains include: 1) Strain ZKHCC1 1396^T, 2) *Corallococcus exercitus* AB043A^T, 3) *C. interemptor* AB047A^T, 4) *C. aberystwythensis* AB050A^T, 5) *C. praedator* CA031B^T, 6) *C. sicarius* CA040B^T, 7) *C. carmarthensis* CA043D^T, 8) *C. llansteffanensis* CA051B^T, 9) *C. terminator* CA054A^T, 10) *C. coralloides* DSM 2259^T, 11) *C. exiguum* DSM 14696^T, and 12) *C. silvisoli* c25j21^T. The data for numbers 2-9, 10-11 and 12 were taken from previous studies [1, 2, 3], respectively. Trace amount (tr), < 0.10 %; ND, not determined. Major fatty acid was marked in

Strain:	1	2	3	4	5	6	7	8	9	10	11	12
C_{10:0} (decanoic)	tr	1.02	2.66	2.15	2.72	0.60	6.15	1.56	1.06	ND	ND	ND
C_{11:0} (undecanoic)	ND	2.58	6.56	2.57	1.62	0.36	1.77	1.77	0.96	ND	ND	ND
C_{15:0} (pentadecanoic)	tr	19.78	11.36	7.60	7.00	5.87	6.47	20.28	13.78	0.10	tr	0.3
iso-C_{15:0} (13-methyl-tetradecanoic)	15.78	45.07	37.03	46.96	58.01	67.4	41.18	43.61	53.50	33.90	36.45	51.08
iso-C_{16:0} (14-methyl pentadecanoic)	5.57	4.15	5.29	ND	2.06	1.60	3.49	1.16	2.36	2.99	1.76	1.1
C_{16:1} (palmitoleic)	0.89	6.97	6.65	0.33	5.32	4.95	8.01	7.84	6.77	ND	ND	ND
C_{17:0} (2-hexyl-cyclopropaneoctanoic)	ND	ND	6.77	ND	4.79	ND	ND	2.07	ND	ND	ND	ND
iso-C_{17:0} (isomargaric)	9.41	6.20	10.31	7.45	4.29	5.53	8.50	ND	2.26	9.35	10.69	14.4
C_{18:1} (oleic)	ND	0.34	ND	0.36	ND	0.18	ND	5.49	0.43	ND	ND	ND

bold.

Table S2: Media and ingredients used in this study.

Media	Ingredients/manufacturer
Middlebrock Broth medium	Becton, Dickinson and Company, France
Müller-Hinton Bouillon (MHB)	Carl Roth GmbH + Co.KG, Germany
Myc-medium (pH 7.0)	1% phytone peptone 1% glucose 50 mM HEPES (11.8 g l ⁻¹) Distilled Water
Myxovirescin-medium (pH 7.0)	1% soy peptone 0.005% CaCl ₂ 0.025% MgSO ₄ 1 mg l ⁻¹ CoCl ₂ 100 mM HEPES (23.8 g l ⁻¹) Distilled Water

P-medium	0,2% peptone (Marcor M) 0,8% starch (Cerestar) 0,4% Probion 0,2% yeast extract (Marcor typ 9000) 0,1% CaCl ₂ x 2H ₂ O 0,1% MgSO ₄ x 4H ₂ O 100 mM HEPES (23,8 g l ⁻¹) 8 mg l ⁻¹ Fe-EDTA pH 7,5
S-medium	0.2% glucose 0.1% MgSO ₄ x 7 H ₂ O 0.4% Soy flour 0.2% yeast extract 0.1% CaCl ₂ .2H ₂ O 50 mM HEPES (11.9 g l ⁻¹) Fe-EDTA 8 mg l ⁻¹
POL-medium (pH 7.2)	0.3% probion 0.3% starch 50 mM HEPES (11.9 g l ⁻¹) 0.7% Mgso ₄ .7H ₂ O 0.5% CaCl ₂ .2H ₂ O Distilled Water
CY-medium (pH 7.2)	0.3% casiston 0.1% yeast extract 0.1% CaCl ₂ 50 mM HEPES (11.8 g l ⁻¹) Distilled Water
CY / H-medium	50% CY- / 50% H-medium
E-medium (pH 7.4)	0.4% skimmed milk 0.4% soy flour 1.0% starch 0.1% MgSO ₄ 50 mM HEPES (11.9 g l ⁻¹) 8 mg l ⁻¹ Fe-EDTA 0.5% glycerine Distilled water
H-medium (pH 7.4)	0.2% soy flour 0.2% glucose 0.8% starch 0.2% yeast extract 0.1% CaCl ₂ 0.1% MgSO ₄ 50 mM HEPES (11.8 g l ⁻¹) 8 mg l ⁻¹ Fe-EDTA Distilled water

Supplementary References

- Livingstone, P.G.; Ingleby, O.; Girdwood, S.; Cookson, A.R.; Morphew, R.M.; Whitworth, D.E. Predatory organisms with untapped biosynthetic potential: descriptions of novel *Corallococcus* species *C. aberystwythensis* sp. nov., *C. carmarthensis* sp. nov., *C. exercitus* sp. nov., *C. interemptor* sp. nov., *C. llansteffanensis* sp. nov., *C. predator* sp. nov., *C. sicarius* sp. nov., and *C. terminator* sp. nov. *Appl. Environ. Microbiol.* **2020**, *86*, 01931–19.
- Garcia, R.; Pistorius, D.; Stadler, M.; Müller, R. Fatty acid-related phylogeny of myxobacteria as an approach to discover polyunsaturated omega-3/6 fatty acids. *J Bacteriol.* **2011**, *193*, 1930–1942.

3. Zhang, X. J.; Feng, G. D.; Liu, Y.; Zhou, Y.; Deng, X.; Yao, Q.; Zhu, H. *Corallococcus silvisoli* sp. nov., a novel myxobacterium isolated from subtropical forest soil. *Arch. Microbiol.* **2022**, *204*, 1-7.