**Additional file 3**

**Novel *Chloroflexi* genomes from the deepest ocean reveal metabolic strategies for the adaptation to deep**-**sea habitats**

Rulong Liu1, 2\*, Xing Wei1, 2, Li Wang1, 2, Junwei Cao1, 2, Weizhi Song3\*, Jiaxin Wu1, 2, Torsten Thomas3,Tao Jin4, Wenxia Wei1, 2, Yuli Wei1, 2, Haofeng Zhai1, 2, Cheng Yao1, 2, Ziyi Shen1, 2, Jiasong Fang1, 5, 6\*

1 Shanghai Engineering Research Center of Hadal Science and Technology, College of Marine Sciences, Shanghai Ocean University, Shanghai, China

2National Engineering Research Center for Oceanic Fisheries, Shanghai Ocean University, Shanghai, China

3 Centre for Marine Science & Innovation and School of Biological Earth and Environmental Science, University of New South Wales, Kensington, Australia

4 BGI-Shenzhen, Shenzhen, Guangdong, China.

5 Laboratory for Marine Biology and Biotechnology, Qingdao National Laboratory for Marine Science and Technology, Qingdao, China

6 Department of Natural Sciences, Hawaii Pacific University, Honolulu, HI, USA

**\*Correspondence:**

**Rulong Liu**, [rlliu@shou.edu.cn](mailto:rlliu@shou.edu.cn), **Weizhi Song**, weizhi.song@unsw.edu.au and **Jiasong Fang**, jsfang@shou.edu.cn

**Taxonomy names proposed for the six MAGs qualified as type material:**

Six MAGs including MT 6\_15, MT 4\_27, MT2\_13, MT2\_3, MT6\_13 and MT4\_14, showed completeness of >80% and contaminations lower than 3.6% (Table 1), and are qualified as type materials according to the criteria defined recently for taxonomy of uncultivated prokaryotes [1, 2]. We propose the names Candidatus *Aerodehalococcoidaceae* (fam. nov.) and Ca. *Aerodehalococcoides hadale* (genus nov. and species nov.) for MT6\_15, for its capability of dehalogenation and for being recovered from oxygenic surface sediment of the hadal zone. MT 4\_27 was putatively named as Ca. *Pseudodehalococcoides chloroalkanivoran*s (genus nov. and species nov.) for its capability of degradation of chloroalkanes via hydrolytic pathways, and the higher ranks were named as family “Ca. *Pseudodehalococcoidaceae*” (GTDB family RBG-16-64-32) and order “Ca. *Pseudodehalococcoidales*” (GTDB order SM2-28-2). MT2\_13 was putatively named as Ca. *Aromodehalococcoides marianensis* (species nov.) for its capability to degrade organic halides and aromatic compounds, and the higher ranks were putatively named as genus Ca. *Aromadehalococcoides* (GTDB: UBA1328), family Ca. *Aromadehalococcoidaceae* (GTDB: Bin127) and order Ca. *Aromadehalococcoidales* (GTDB: UBA1151). MT2\_3, MT6\_13 and MT4\_14 belong to the family UBA3495 of the order UBA3495 (former SAR202 group III), which have been putatively named *Monstramariaceae* and *Monstramariales* in Saw et al. [3]. We decided to adopt these order and family names and name MT2\_3 as Ca. *Monstradehalococcoides dehalogenans* (genus nov., species nov.), MT6\_13 as Ca. *Monstramaris marianensis* (species nov.) and MT4\_14 as Ca. *Monstramaris hadale* (species nov.).

Aerodehalococcoides Gr. masc. n. aer (gen. aeros), air; N.L. masc. n. dehalococcoides, a bacterial genus name; N.L. masc. n. Aerodehalococcoides, aerobic Dehalococcoides

Pseudodehalococcoides Gr. masc./fem. adj. pseudês, false; N.L. masc. n. dehalococcoides, a bacterial genus; N.L. masc. n. Pseudodehalococcoides, false Dehalococcoides

Aromadehalococcoides L. neut. n. aroma (gen. aromatis), spice; N.L. masc. n. dehalococcoides, a bacterial genus; N.L. masc. n. Aromadehalococcoides, Dehalococcoides degrading aromatic compounds.

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