



Untypical even-to-odd predominance in the low-molecular *n*-alkanes of water, suspended matter, and bottom sediments in some regions of the Arctic Basin

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Over the years, several studies have shown an unusual predominance of even-carbon number *n*-alkanes in dissolved and particulate phase samples and sediment samples from various regions of the World Ocean [Nachman, 1985; Nishimura and Baker, 1985; Elias et al., 1997]. Different possible sources were proposed such as diagenesis (diagenetic origin from co-occurring fatty acids and alcohols), direct microbial input, microbial degradation of algal detritus, etc. Some researchers, however, are incredulous about this phenomenon and consider relatively high content of even-carbon number *n*-alkanes as contamination during the experiments. We report here the results of GC and GC-MS analysis of water, suspended particulate matter and sediment samples collected during 7 marine and coastal scientific expeditions to the White and Kara Seas, and to the central Arctic Basin (2004-2013). Many of the above samples (more than 30) present *n*-alkane distribution with a strong even-carbon number predominance of *n*-C₁₄H₃₀, and *n*-C₁₆H₃₄. Maximum enrichment was observed in some suspended matter samples with predominance of *n*-C₁₆H₃₄. The origin of even-carbon number *n*-alkanes in marine ecosystems is still not clear. In Antarctic region *n*-C₁₆ and *n*-C₁₈ and other even chain *n*-alkanes were reported to be dominant in the samples of the sea-ice algae, zooplankton and fish [Green et al. 1997] however in the Arctic region this phenomenon has not been demonstrated yet. Increasing of bacteria number and $\delta^{13}C$ values observed in course of the accompanying studies [Lein et al., 2013] suggest existence of mechanism of phytoplankton bacterial destruction in the Arctic ecosystems, leading to formation of even-carbon number *n*-alkanes.

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