
[JJ] Evening Poster | B (Biogeosciences) | B-BG Biogeosciences & Geosphere-Biosphere Interactions

[B-BG03]Microbial ecology in earth and planetary sciences

convener:Michinari Sunamura(University of Tokyo Dept. of Earth &Planetary Science), Natsuko

Hamamura(Kyushu University), Keisuke Koba(京大大学生態学研究センター, 共同), Yuki Morono(Kochi

Institute for Core Sample Research, Japan Agency for Marine-Earth Science and Technology)

Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Microbes have exerted the great influences on earth environments through the history of earth.

Microbial ecology is a study of interaction between microbes and surrounding environments. Research target of Microbial ecology covers most of environments on the earth and planet, e.g. soil, subsurface, subseafloor, ocean, river, lake, air, space, volcano, fault and earthquake, minerals, and more. In this session, we aim to exchange informations of microbial distribution, population dynamics, function, effect on material cycles between microbial ecologist and earth&planetary scientist. We hope effective discussion from interdisciplinary approaches in this session.

[BBG03-P06]Assessment of clean laboratory conditions for contamination by DNA aerosols

*Takeshi Terada¹, Yuki Morono², Tatsuhiko Hoshino², Taketo Suzuki³, Takuhiro Sato³, Hisashi Yuasa³, Yuji Kubota³, Fumio Inagaki² (1.Marine Works Japan Ltd., 2.Kochi Institute for Core Sample Research, JAMSTEC, 3.Koken Ltd.)

Keywords:clean laboratory conditions, DNA aerosols, contaminant rejection capacity

In parallel to the development of molecular biology techniques that enabled ultra-sensitive detection of DNA/RNA molecules, there has been a growing concern on the experimental contamination by exogenous molecules in experimental environments, which leads to false-positive results. In this study, we assessed DNA aerosols for the contamination risk and tested contaminant rejection capacity of air filter utilized for constructing clean experimental environment. The DNA aerosols-containing air was introduced into the Table KOACH (KOACH T 500, Koken, Ltd.) unit with FERENA (Super High-Performance Air) filter for assessing its capacity to trap and remove DNA aerosols. At downstream of the filter, detection of DNA molecules was greatly reduced and only detected at the highest exposure condition of DNA aerosols. The number of detected molecules at downstream of the filter was 0.039% of the detected molecules at upstream, which means that more than 99.96% of DNA-aerosols are trapped and removed by the FERENA filter. These results demonstrated that the number of aerosol formed in general molecular biology experiment are small and contamination by them can be avoided by the careful but basic procedure at laminar flow clean air condition.