

**Basic Research for Evaluation of Environmental Hygiene in Railway Vehicles Using Microbiome Analysis**

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To evaluate environmental hygiene, microbiome analysis that comprehensively and qualitatively grasps the types and proportions of microbial genes on surfaces and airborne samples in railway vehicles was introduced. We monitored commuter vehicles using this analysis technology and confirmed that it was possible to grasp the difference in microbiome according to the difference in equipment. As a result, the microbial diversity of each equipment suggests that a floor has a different microbiome from others, and that the equipment which passengers directly touch, such as handrails and grips, have similar microbiome. The result of estimation analysis of origin of microorganisms indicates that the proportion of human-derived microbiome tends to be high in handrails and grips.