

Novel Microbial Resources from Marine Environment

Yoshikazu Shizuri

Marine Biotechnology Institute, Japan

The marine environment represents a considerable and relatively unexplored resource for exploitation by biotechnology industry. Marine bacteria form a considerable proportion of 'unseen' biomass within this environment and are increasingly being exploited for their ability to synthesize a variety of valuable chemicals including antibiotics, enzymes and surfactants and so on. Although, the importance of marine microorganisms as important resources is well known, most of such microorganisms have yet to be isolated from the marine environment. Therefore, we are currently involved in a development of several new method for isolation useful and untouched marine bacteria those could not be obtained by using ordinary techniques. To realize these purpose. Thus, a new selection method for novel marine bacteria was developed by using artificial sponges containing several chemicals in media. By denaturing gradient gel electrophoresis(DGGE) analysis, novel marine bacteria are proved to be stimulated in the sponges immersed in several marine environment for 3 days. By changing chemicals and sampling sites, many interesting bacteria were probed to be stimulated in sponges by DGGE analysis. Furthermore, a new selection method by using korormicin, a specific antibiotic against marine gram negative bacteria has also been developed. By using these new methods, we have isolating many novel marine microorganisms from marine environment.

For uncultured microorganisms, we also develop a new efficient methods to collect useful enzyme genes without cultivation.

In this symposium I will explain these new methods and the results.

Yoshikazu Shizuri
Science Director
Marine Biotechnology Institute

Date of Birth: Nov. 3rd, 1945

Nationality: Japanese

Address: Office: **Marine Biotechnology Institute**

3-75-1 Heita, Kamaishi-shi,

Iwate, 026-0001 Japan

Tel +81-193-26-6581

Fax +81-193-26-6592

E-mail yashizuri.shizuri@mbio.jp

Home: 10-589-1 Kassi-cho, Kamaishi-shi,

Iwate, 026-0055 Japan

Tel+81-193-21-5004

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| 1968 | Graduated from Faculty of Science, Nagoya University |
| 1968-1974 | Teaching Assistant, Faculty of Science, Nagoya University |
| 1974 | Ph. D. Nagoya University |
| 1974-1976 | Postdoctoral fellow at the Department of Chemistry, Virginia University (S. Morris Kupchan) |
| 1976-1980 | Researcher at Banyu Pharmaceutical Company |
| 1980-1982 | Assistant, Faculty of Science, Nagoya University,
(Professor Kiyoyuki Yamada) |
| 1982-1990 | Associate Professor, Faculty of Science and Technology,
Keio University |
| 1990-1994 | Professor, Tokushima Bunri University |
| 1994-1997 | Chief Scientist at Marine Biotechnology Institute |
| 1997- | Science Director at Marine Biotechnology Institute |