# Development of artificial medium for oceanic phytoplankton

Kaori Ohki, Yoshihiko Fujita, Tohru Ikeya and Jhon G. Rueter[1]
Department of Cell Biology, National Institute for Basic Biology and Department of Biology, Portland State University[1]

## Summary

The artificial medium was developed for cultivation of oceanic phytoplankton. 1. The Sea Water Salt of Aquil medium (Morel et al.) was used as a basic salts after modification. 2. As the pH buffer, such as tris-(hydroximethyl) aminomethan, was toxic on some oceanic species, combination of $NaHCO_3$, NaOH and HCl was used to adjust the pH. 3. To avoid forming precipitaion during autoclaving, (a) the medium was kept in low pH (6.0) or (b) two components, $CaCl_2$ and $SrCl_2$ $6H_2O$ were separately autoclaved. 4. The dramatic pH change was observed after autoclaving. The pH of the medium was re-adjusted, if necessary, after the pH change was in equilibration. Fifteen out of nineteen oceanic phytoplankton able to grow in this artificial medium as well as in enriched sea water. The preliminary experiments using this artificial medium suggested that some oceanic phytoplankton have an ability to utilize the very low concentration of iron and inorganic phosphate.