Cell Culture Media Customization Services & Food-grade DMEM (Prototype)

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Nacalai Tesque is one of the leading life science reagent suppliers in Japan. It dates back to 1846 when the company's founder Mansuke Nakarai opened Nakarai Mansuke Shoten, Ltd., an apothecary selling traditional Japanese and Chinese medicines. The company has since dedicated itself to expanding its corporate base and has strived to be an enterprise that our customers always rely on, while taking pride in its contribution to scientific and industrial development. Recognized in the international research chemical and life science market, Nacalai Tesque gears up its R&D and business activities for meeting the global demand in Biotechnology, Genomics, Proteomics, and Next-gen food production.

Nacalai Tesque is a

- Manufacturer of cell culture media, antibodies, enzymes, research chemicals, HPLC and capillary columns and other analytical kits.
- Supplier to laboratories at universities, pharmaceutical and food-beverage companies, public and private research institutes, and to other Japanese trading houses.
- Exporter of its own cell culture media, bio-reagents, fine chemicals and COSMOSIL HPLC and capillary columns.

Nacalai Tesque has many years of experience in manufacturing cell culture media, and we offer customization services for media according to your personal requirements such as composition, preparation method, material specification and quality. For inquiries / quotations for customized culture media, please visit our web site and fill out request form. http://www.nacalai.co.jp/global/reagent/custom/Custom_Services.html

Food-grade DMEM (Prototype)

Meat cultivated *in vitro* from animal cells has the potential to overcome many environmental and public health problems associated with existing production methods or become an alternative to meet the increasing demand for meat. However, culturing meat cells usually uses a basal medium that contains chemical reagents. Thus, to increase safety and to ensure that it can be consumed, a basal medium that is only made from ingredients approved as food may needed. Here, we are modifying Dulbecco's Modified Eagle's Medium (DMEM) by replacing several components with food grade ingredients such as amino acids, vitamins and inorganic salts. The results of culturing several cell lines, including C2C12, HEK293 and SNL76/7 cells show similar growth rates and differentiation pattern compared to conventional DMEM.

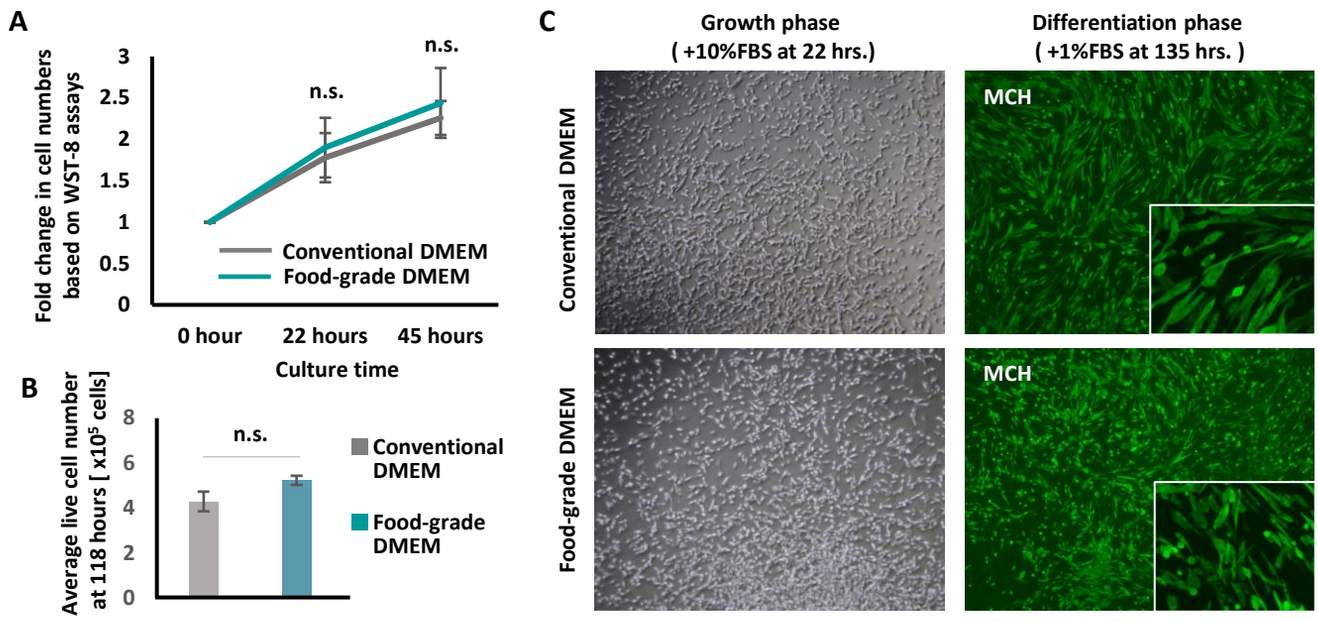

Figure 1. Cell growth and differentiation to mature muscle cells of C2C12 mouse myoblast cells in conventional and food-grade DMEM. **(A-B)** The WST-8 assay revealed that cell proliferation was not significantly (n.s) different in both DMEM. **(C)** Phase-contrast (growth phase) and immunochemistry (differentiation phase) images of C2C12 cells. The results of immunochemistry using markers for differentiated mature muscle cells (MCH II, anti-myosin 4) also did not show significant differences. However, differences occurred in cell morphology. It is known that muscle cells are characterized into several phenotype, and the determination of fate was known dependent on the external environment, including the basal medium. Further investigation is ongoing.

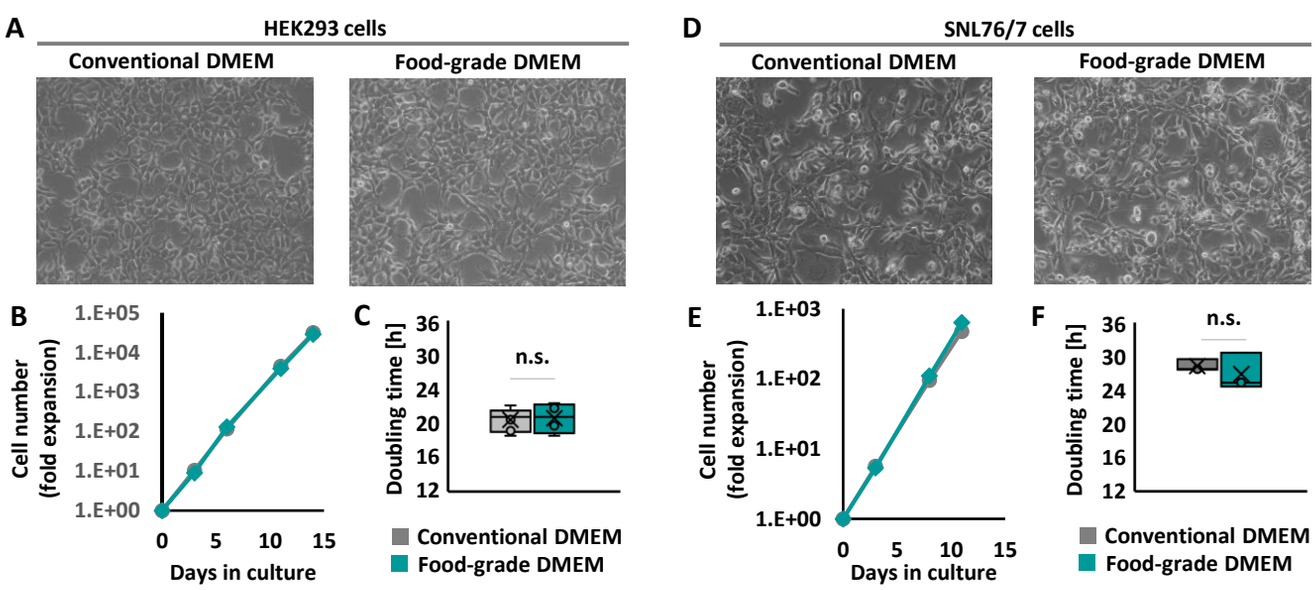

Figure 2. Cell morphology and growth of human embryonic Kidney HEK293 cells(A-C) and mouse embryonic fibroblast SNL76/7 cells(D-F). There was no significant difference of cell morphology, growth curve and doubling time in both media.

NACALAI TESQUE, INC.

Nijo Karasuma, Nakagyo-ku, Kyoto 604-0855 JAPAN
TEL : +81-(0)75-251-1730
Website : www.nacalai.com
E-mail : info.intl@nacalai.com 1902

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