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**Olympus Collaborates with the Tokyo Medical and Dental University to Test a Next-Gen Digital Data Management Solution****The digital solution enables researchers to archive, organize and share data from the Olympus CM20 incubation monitoring system**

As part of Olympus' commitment to providing digital solutions that improve the efficiency of cancer and stem cell research, the OLYMPUS Provi CM20 incubation monitoring system has changed the way cell culture monitoring is conducted with reliable, quantitative data. Now, Olympus is collaborating with the Tokyo Medical and Dental University to test a next-gen, cloud-based digital solution that enables easy archiving, organizing and sharing of CM20 monitor data to improve the overall quality of research.

**▪ Managing Life Science Research Data**

As digital technologies become more advanced, life science researchers are faced with the increasingly difficult task of managing the data. To streamline this process, Olympus is developing a cloud-based digital management tool that enables users to keep track of traceable raw data and post-analysis data as well as share the data with colleagues. To test and refine this solution under real-world conditions, Olympus is building off an ongoing collaboration with Dr. Takanori Takabe at the Tokyo Medical and Dental University. Dr. Takabe is researching differentiation into liver cell tissues using induced pluripotent stem (iPS) cells. He is using the CM20 monitor's quantitative data to track the growth and health of iPS cells to improve the cell culture process. Through the research, Dr. Takabe found that even iPS cells cultured using the same protocol had different growth conditions depending on the cell line. Managing these data can be complicated, making it an excellent test case for Olympus' digital data management solution.

**▪ Quantitative Cell Culture Data Improves Research**

iPS cells are difficult to maintain because they grow inconsistently. If they outgrow their vessel container, the cells can die, ruining the culture. Using conventional methods, researchers periodically remove culture vessels from the incubator and check the cells under a microscope. This method relies on the researcher's skill and experience to accurately time when a culture needs to be split into new vessels. With the CM20 monitor, the scan head remains in the incubator with the culture vessels where it periodically scans the cells and sends quantitative data to a nearby computer. These data enable researchers to accurately track the growth of their iPS cells.

The CM20 incubation monitoring system is the first Olympus product to work with the new digital solution. Instead of sending data to a stand-alone computer, the CM20 monitor will send data directly to the new cloud-based solution, where researchers can view it wherever and whenever it is convenient to them.

Over the next year, researchers and Olympus engineers will refine the digital solution to meet the real-world needs of scientists. When complete, this solution will improve the reproducibility, efficiency and reliability of data while reducing costs.

▪ **About Tokyo Medical and Dental University Division of Advanced Multidisciplinary Research**

As the only comprehensive medical graduate university in Japan, Tokyo Medical and Dental University believes that its mission and ultimate goal is not only to produce excellent research results, but to apply the results to medical care to improve people's health. The Division of Advanced Multidisciplinary Research aims to create organoids from stem cells, such as iPS cells, using the latest knowledge in stem cell and developmental biology.

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