

Supplying DNA to support worldwide medical research

At the Coriell Institute for Medical Research, the Coriell Cell Repositories serve the needs of the entire scientific research community by maintaining the world's largest collection of human cell lines. Scientists there are using a Freedom EVO® 150 liquid handling workstation to prepare DNA from these cells, to distribute to research scientists investigating human disorders worldwide.

The Coriell Cell Repositories maintain a variety of cell lines representing a broad range of human diseases that are either known to have, or suspected of having, a genetic component, encompassing samples from various cancers and disorders like Prader-Willi syndrome, autism and Alzheimer's disease. "The role of the Molecular Biology Laboratory is to prepare and provide DNA samples from these cells, for distribution to the scientific community," explained Dr Patrick Bender, Director of the Molecular Biology Laboratory. "We have a Freedom EVO 150 workstation configured with an 8-channel liquid handling (LiHa) arm, a robotic manipulator (RoMa) arm and hotels, and an integrated REMP plate sealer which uses a variety of materials to seal 96-well plates."

"At present, DNA quantitation is done manually, but all subsequent pipetting steps are automated. We typically prepare milligram amounts of DNA, and dispense these into microgram aliquots for shipping. We are faced with somewhat different liquid handling needs to a research laboratory, one of which is the flexibility to dispense into a variety of different vessels, such as 2

ml plastic cryovials and 96-well plates, depending on the needs of the end user. In addition, because we dispense DNA of relatively high concentration, there are pipetting issues caused by high viscosity. The Freedom EVO performs outstandingly with water, and we were able to make a variety of measurements to establish liquid handling classes and calibration curves at various volumes for the more viscous samples we handle, using different disposable pipette tip sizes ranging from 10 µl to 1000 µl. We are pleased with the CVs, which are typically less than 8 % at 2 µl and below 5 % for volumes above 5 µl."

"Some of the attractive features of the Freedom EVO are its flexibility and the assortment of accessories that can integrate with the instrument, such as the plate sealer. The Tecan user interface is programmable, generally by simple drag-and-drop operations. One of my colleagues attended a Tecan training course at the Research Triangle and can now easily program the instrument for a variety of laboratory processes." Dr Bender concluded: "We have had the Freedom EVO since the beginning of 2007 and we are very happy with the platform's performance and reliability."



The Freedom EVO in use at Coriell



William Beggs and Susan Jones



Ron Soltesz, William Beggs, Patrick Bender, Susan Jones and Holly Banský