

## A CDS-5 LOVE STORY: Creating Consistent, Reliable Environments

It's not often you lovingly hug a 450-pound piece of equipment, but if it makes your work life easier, you show your appreciation. The CDS-5 helps lab technologists create consistent and reliable environments for their work regardless of the day-to-day variables, like the weather.

Imagine the weather outside impacting your office work indoors. Sounds inconvenient, right?

That used to be a daily inconvenience for cytogenetic technologists at the Cytogenetics and Genomics Laboratory at the University of Washington Medical Center. How easy or difficult a workday could be depended on Seattle's rainy climate. Weather variances—like temperature, humidity, and dryness outside—affected the genetic tests done inside the lab, leading to imperfect and inconsistent testing conditions. That is, until a CDS-5 Chamber was ordered for their lab.

The Cytogenetics and Genomics Laboratory at the University of Washington Medical Center is a full-service diagnostic pathology lab specializing in constitutional, neoplasia, and research testing. Five directors, nine technologists, two technicians, one genetic counselor, and lab supervisor, Christine Donovan, staff the state-of-the-art lab. "The equipment is really helpful and has improved work in the lab," Donovan said. "Our techs love the CDS-5 chambers because of how easy they are to use and how they have made their jobs easier."

The CDS-5 Chamber, a cytogenetic drying system for performing chromosome spreading tests, assists cytogenetic lab professionals create a consistent, reliable, and repeatable testing environment regardless of what's happening in the ambient laboratory surroundings.

Prior to using a CDS-5 Chamber, all the chromosome tests performed needed to be constantly adjusted and tweaked manually until the ideal temperature and humidity environment was achieved in the lab, which was significantly impacted by the weather. If it was dry outside, the cells would sometimes dry faster and the chromosomes wouldn't spread adequately, leading to poor quality metaphase (the second stage of cell division) spreads. On a humid day, the cells would sometimes dry slower, causing overspreading where chromosomes could escape the cell into another part of the microscope slide or into another cell.

When performing chromosome tests, lab technologists are looking for chromosomal aneuploidy (an abnormal number of chromosomes) or structural changes to cells. Cell preparations on microscope slides must be performed at ideal temperature and humidity conditions to be effective, which is why the CDS-5 is an important tool for the lab.

Information from genetic abnormalities gained through chromosomal and genomic testing can be helpful for establishing a diagnosis and disease classification and monitoring. Testing can be an essential component for individuals with anything from cancer to congenital malformations to infertility, among other things. The lab serves many clients, including, but not limited to: University of Washington Medical Center and all satellite facilities, as well as medical facilities around Puget Sound, Eastern Washington, and Alaska.

The Cytogenetics and Genomics Laboratory at the University of Washington Medical Center has two CDS-5 chambers.



Lab technologists love the CDS-5. The Cytogenetics and Genomics Laboratory at the University of Washington Medical Center create a consistent environment for chromosomal testing with the CDS-5, making the technologists' jobs easier and saving time and resources in the process.

"The chambers are used anytime and every time microscope slides and in-situ coverslips are prepared," said Donovan, who has been with the lab since 2006. "The chamber workspace gives us a controlled environment that we can depend on."

The CDS-5 is used for microscope slide preparations from specimens like blood, bone marrow, and lymph nodes. It is also used for in-situ coverslip preparations from amniotic fluid, chorionic villi, fetal and prenatal tissue, skin cells, and tumors. In addition, it is used for metaphase and interphase FISH (Fluorescence in situ Hybridization) preparations.

"Lab techs can work more efficiently with cell samples," Donovan said.

"Every day the CDS-5 creates a standardized environment that helps with day-to-day tasks and to improve test processes."

The CDS-5 provides the exact same standard environment every single time it is used. When staff members perform quality improvement studies, only one variable is changed at a time. This allows staff to compare results head-to-head to see if the change was helpful in improving the process or if additional steps need to change.

"The CDS-5 chamber ensures that all other variables are constant so you are accurately testing that one specific change to see its benefits or drawbacks," Donovan explained.

An example of improvement processes the lab has used the CDS-5 for is the exposure time needed for staining reagents is relatively consistent day in and day out.

Even though the weather will always be unpredictable, and considering Seattle's reputation for rain, the lab will continue to provide high quality genetic testing services reliably and efficiently using the Thermotron CDS-5.



A lab technologist at the Cytogenetics and Genomics Laboratory at the University of Washington Medical Center uses the CDS-5 to preform cytogenic tests. The CDS-5 is patented for both its ergonomic design and functionality.

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