October 3, 2014

Immucor Announces NGS Collaboration with Sirona Genomics

Partnership to bring NGS sample prep and bioinformatics offering designed specifically for HLA typing to the market

NORCROSS, Ga., October 3, 2014 - Immucor, Inc., a global leader in transfusion and transplantation diagnostics, today announced its collaboration with Palo Alto, CA-based Sirona Genomics (Sirona), a privately-held company focused on human leukocyte antigen (HLA) typing using **next generation sequencing** (NGS). Sirona was spun out of the Stanford Genome Technology Center (SGTC) at Stanford University.

Under the terms of the agreement, Immucor will provide development funding to support the commercialization of Sirona's HLA typing sample preparation and bioinformatics offering that uses leading NGS instruments. As part of this agreement, Immucor retains an exclusive option to acquire the company.

"For more than 20 years, Immucor's LIFECODES business has been committed to advancing transplant medicine through the introduction of innovative products that raise the standard of care," stated William A. Hawkins, Immucor's President and Chief Executive Officer. "Our collaboration with Sirona represents the next innovation for the HLA industry - whole gene NGS that better matches patients and donors to improve health outcomes. We look forward to supporting Sirona to make this offering a reality."

"Sirona Genomics is excited to be working with Immucor, a leader in transplantation diagnostics, to commercialize our HLA typing NGS solution," stated Michael Mindrinos, Ph.D., President of Sirona and one of its founders. "Our HLA typing solution will provide accurate, complete coverage of all major HLA gene regions. Our integrated offering will enable customers to move from sample to result in a fully automated fashion that supports efficient lab workflow."

"The Sirona HLA typing products provide the most complete picture of the HLA that I have seen," stated Marcelo Fernández-Viña, Ph.D, Professor for the Department of Pathology at Stanford University Medical School, co-Director of the Histocompatibility, Immunogenetics and Disease Profiling Laboratory at Stanford University and one of Sirona's founders. "Sirona's use of clonal template amplification in vitro eliminates virtually all ambiguity assignments that are associated with sequencing heterozygous DNA by other methodologies as the long read lengths that are sequenced are able to cover entire exons in phase. The complete gene coverage permits the inspection of known and novel variants that may determine phenotype expression and eliminates inferences and assumptions that are made with the HLA methodologies currently used. In turn, the novel methodology permits the clinician to assess accurately the match grades between patients and their donors in allogeneic transplantation."

Sirona's technology was initially supported by research grants from the National Institutes of Health (NIH) to SGTC Director, Ronald Davis, Ph.D., Professor of Biochemistry and Genetics and to Mark Davis, Ph.D., Director of Stanford Institute for Immunity, Transplantation and Infection, and Professor of Microbiology and Immunology, both founders of Sirona, as well as research grants from The Defense Threat Reduction Agency to Dr. Mindrinos, former Associate Director of the SGTC.

About the Sirona Offering
Sirona's targeted NGS solution for HLA typing is the result of more than 5 years of research and development. The product offering enables high resolution matching up front with no need for secondary testing to resolve ambiguities, which shortens the donor search process and allows for faster, better treatment for patients. Sirona's solution consists of a front-end sample preparation offering that includes automation as well as a back-end bioinformatics offering.

Sample Preparation
Sirona's sample preparation offering includes a unique primer and PCR mix formulation that enables robust, targeted amplification for full coverage and accurate genotype calls as well as a unique library preparation that reduces the risk for cross contamination and enhances the quality of the sample for sequencing.

The result of this amplification and library preparation is the ability to achieve whole gene coverage of all major HLA gene regions, including: HLA-A, -B, -C, -DPA1, -DPB1, -DQA1, -DQB1, and -DRB1 3/4/5.

The Sirona sample preparation workflow will be available in two configurations: an integrated automated solution for high throughput labs and a semi-automated solution for lower volume settings.

Bioinformatics
Sirona's bioinformatics offering leverages the broad coverage and deep sequencing data from leading NGS systems to provide accurate genotyping calls for whole gene HLA sequences while eliminating ambiguities. With enhanced allele resolution and the ability to detect novel HLA alleles, Sirona's bioinformatics solution will provide highly accurate typing of samples in a user-friendly interface.

Availability
The Sirona solution will be available to early-access customers later this year. Stay tuned for additional updates about the Sirona Genomics offering at upcoming transplant conferences and major industry events.

Advisors
Ropes & Gray represented Immucor in connection with its entry into this collaboration.

About Sirona Genomics
Sirona Genomics was spun out of the Stanford Genome Technology Center (SGTC) at Stanford University with a focus on developing next generation sequencing typing applications specifically for the human leukocyte antigen (HLA). Based in Palo Alto, CA, the company was founded by Ron Davis, Ph.D., Director of the SGTC and Professor of Biochemistry and Genetics at Stanford University; Mark Davis, Ph.D., Director of Stanford Institute for Immunity, Transplantation and Infection, and Professor of Microbiology and Immunology at Stanford University; Michael Mindrinos, Ph.D., former Associate Director of the SGTC; Marcelo Fernández-Viña, Ph.D., Professor for the Department of Pathology at Stanford University Medical School, co-Director of the Histocompatibility, Immunogenetics and Disease Profiling Laboratory at Stanford University; Sujatha Krishnakumar, former Life Science Research Associate at SGTC; and Chunlin Wang, former Senior Research Scientist at SGTC.

About Immucor
Founded in 1982, Immucor is a global leader in transfusion and transplantation diagnostics that facilitate patient-donor compatibility. Our mission is to ensure that patients in need of blood, organs or stem cells get the right match that is safe, accessible and affordable. With the right match, we can transform a life together. For more information on Immucor, please visit our website at www.immucor.com.

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