

GENOMICS CENTER AT SBRI CONTRIBUTES TO SOLUTIONS FOR SWINE FLU

Goal is to provide structural blueprint for new or improved drugs

SEATTLE, May 5, 2009 – With the outbreak of H1N1 (swine) flu creating concern around the world, scientists who are part of the Seattle Structural Genomics Center for Infectious Diseases (SSGCID) are focused on determining if there are potential new drug targets or methods of strengthening current drugs being used to combat this disease. Headquartered at Seattle Biomedical Research Institute (SBRI) and led by SBRI Principal Investigator Peter Myler, the SSGCID was established in late 2007 with a \$30.6 million, five-year contract from the National Institute of Allergy and Infectious Diseases (NIAID), which is part of the National Institutes of Health (NIH).

SSGCID scientists use state-of-the-art high-throughput technology to experimentally determine the three-dimensional structures of proteins from a number of bacterial, viral, fungal and protozoal pathogens. According to Myler, since the outbreak of H1N1 (swine) flu, he's been in communication with NIAID and SSGCID collaborators, which include several Washington-based institutions: deCODE biostructures on Bainbridge Island, the University of Washington in Seattle and Battelle Northwest in Richland, as well as other scientists at SBRI. They agreed that a top priority was solving some of the protein structures from the new strain of swine flu, and work has already begun. Structures of interest to solve are proteins responsible for replication of the virus' hereditary material (known as RNA polymerases) and a protein called neuraminidase, which is found on the surface of the virus and facilitates binding to the human host cell. Antivirals such as Tamiflu and Relenza target the neuraminidase, but there is growing evidence of mutations leading to resistance to these drugs.

“With the knowledge we gain by elucidating the structure of Influenza virus proteins, we could potentially find ways to modify current drugs and strengthen them or to develop new drugs to combat the disease,” Myler explained. While Myler also added that this process is difficult and time-consuming, he reiterated that it is essential to gain a more fundamental understanding of the Influenza virus in order to create new solutions for future outbreaks or recurrences. “Structure-based drug design holds a great deal of potential for new interventions,” he said, “and doing this sort of fundamental research allows us to find new ways to break the chain of transmission.”

Since its inception, the SSGCID has solved 80 protein structures, with the results being published and shared with the worldwide scientific community.

About Seattle Biomedical Research Institute

SBRI advances global health. Our infectious disease research is the foundation for new drugs, vaccines and diagnostics that benefit those who need our help most: the 14 million who will otherwise die each year from infectious diseases. A non-profit organization founded in 1976, SBRI has more than 300 staff members working in research labs in Seattle and field labs in Tanzania. By partnering with key collaborators around the globe, we ensure that our discoveries will save lives sooner. For more information, visit www.sbri.org.