March 5, 2020
Sysmex Corporation

Sysmex and the Kobe City Eye Hospital Sign a Comprehensive Collaboration Agreement

-Reinforcing Collaboration toward the Realization of Genomic Medicine in the Area of Ophthalmic Disorders-

Sysmex Corporation (HQ: Kobe, Japan; Chairman and CEO: Hisashi Ietsugu) and the Kobe City Eye Hospital (Location: Kobe, Japan; Director: Yasuo Kurimoto) announce that they have entered into a comprehensive collaboration agreement related to the clinical implementation of genomic medicine for hereditary retinal degenerative diseases. The agreement was signed in February 2020.

Based on a decision by the Japanese Cabinet, the Ministry of Health, Labour and Welfare's Investigative Commission for the Promotion of Genomic Medicine in Relation to Intractable Diseases[1] is deliberating on the "promotion of genomic medicine for cancer and intractable diseases…putting in place a system to facilitate genetic testing for intractable diseases with a view to achieving earlier-stage diagnosis, and promoting the development of therapeutic methods that leverage whole-genome information including gene therapy." For many hereditary and other intractable diseases, a significant amount of time elapses between disease onset and a confirmed diagnosis. The government's basic policy based on the Act on Medical Care for Patients with Intractable Diseases calls for "building systems to enable accurate diagnoses to be received as quickly as possible, and putting in place a system that facilitates appropriate medical treatment at nearby medical institutions once disease has been diagnosed."

To date, medical and scientific knowledge has been in short supply for hereditary diseases in particular. However, knowledge is being accumulated on the genes that cause disease by using next-generation sequencing (NGS) to conduct multigene analysis. In recent years, new inroads have been made on one type of hereditary disease—hereditary retinal degenerative diseases.[2] In the United States, gene therapy[3] drugs have been approved that target disease-causing genes.

As an ophthalmic core hospital and an ophthalmology research institute, the Kobe City Eye Hospital's outpatient services for retinal degeneration include proactive gene diagnosis research and genetic counseling. The hospital aims to serve as a one-stop center offering standard medical care and state-of-the-art treatment based on genetic information and providing support to help patients return to society. On hereditary retinal degenerative diseases, the hospital has been actively involved in both basic and clinical research connected to diagnosis and treatment.

Sysmex has identified the "resolution of medical issues through products and services" as a priority issue (materiality). We are moving forward in the area of personalized medicine, which provides healthcare optimized for individual patients, and are promoting R&D with a view to realizing testing that places a low physical burden on patients. Sysmex has received manufacturing and sales approval for the first time in Japan for a system to be used in cancer gene profiling, contributing to the clinical implementation of cancer genomic medicine.

In February 2020, Sysmex and the Kobe City Eye Hospital signed a comprehensive collaboration agreement toward the clinical implementation of genomic medicine in the area of ophthalmic disorders. This collaboration aims to leverage the Kobe City Eye Hospital's knowledge spanning genetic diagnosis and treatment, as well as *in vitro* diagnostic pharmaceuticals and expertise in the development of analytical programs possessed by Sysmex and its subsidiaries, RIKEN GENESIS Co., Ltd. (HQ: Tokyo, Japan; President & CEO: Naoto Kondo) and Oxford Gene Technology IP Limited (HQ: Oxfordshire County, United Kingdom; CEO: John Anson). We will start by focusing on the early clinical implementation of genetic testing required for the diagnosis and treatment of hereditary degenerative retinal diseases and gene counseling.

By creating treatment opportunities with respect to hereditary diseases, we aim to enhance patients' quality of life and contribute to the advancement of medicine.

Terminology

1 Investigative Commission for the Promotion of Genomic Medicine in Relation to Intractable Diseases:
This commission was established by the Ministry of Health, Labour and Welfare in line with the formulation of the "Action Plan for a Growth Strategy," the "Follow-up on the Growth Strategy" and the "FY2019 Action Plan on Innovative Business Activity" (June 21, 2019 Cabinet decisions) to provide advice from a specialized perspective.

2 Hereditary retinal degenerative diseases:
Initial symptoms include difficulty in seeing in dark locations and a narrowing field of vision, and in some cases may lead to a loss of vision. Gene mutations can cause extensive generation to the retina's photoreceptor cells and pigment epithelial cells. In some cases, people affected by such diseases maintain good eyesight throughout their lives, but progression differs substantially from person to person. In many cases, ongoing disease progression leads to social blindness (corrected vision of 0.1 or less).

3 Gene therapy:
This refers to treating diseases caused by genes that are defective or do not function normally, through such methods as introducing into a patient's body viruses that incorporate genes from outside the body, helping to suppress the actions of disease-related genes.