

January 29, 2020
Sysmex Corporation
Astrego Diagnostics AB

Sysmex Invests in Astrego Diagnostics with a View to Developing New Urinalysis Solutions for the Primary Care Business

Sysmex Corporation (HQ: Kobe, Japan; Chairman and CEO: Hisashi Ietsugu) has reached an agreement to invest in Astrego Diagnostics AB (HQ: Uppsala, Sweden; CEO: Ove Öhman). Through this investment, Sysmex aims to help commercialize a rapid drug susceptibility test¹ that Astrego is developing for urinary tract infections.²

With this investment, Sysmex acquired 24.99% of Astrego's shares.

Urinary tract infections are infectious diseases with a high rate of incidence and are said to affect 150 million people globally.³ These infections are generally treated by administering antimicrobial drugs. In addition to clinical findings, administering appropriate antimicrobial drugs involves conducting identification tests⁴ of bacteria, as well as drug susceptibility tests; however, such testing can require several days, making it difficult to administer the appropriate antimicrobial drugs based on the result of tests conducted at the first consultation. As a result, inappropriate antimicrobial drugs can be administered, leading to the development of antimicrobial resistance.⁵

This situation is not limited to urinary tract infections, and the spread of resistant bacteria due to the administration of inappropriate antimicrobial drugs is becoming a global issue. In May 2015, the World Health Assembly adopted the Global Action Plan on Antimicrobial Resistance, prompting an acceleration of countermeasures, particularly among advanced countries.

Astrego's proprietary microfluidic technology (<https://astrego.se/technology/>) involves forming tiny channels at the nanometer to micrometer level, capturing individual bacteria from among the multiple bacteria present in a fluid, and cultivating bacteria unidirectionally within these tiny channels, resulting in a rapid drug susceptibility test. Astrego is currently using this microfluidic technology to develop a compact analyzer to test for drug susceptibility in urine samples in a short period of time.

Sysmex has made becoming "a solution provider contributing to the advancement of primary care diagnostics" one of its long-term management goals (formulated in fiscal 2018) to be achieved by 2025, and the Group is working to realize this goal.

In December 2019, Sysmex and Astrego reached an agreement under which Sysmex will invest in Astrego with the aim of commercializing Astrego's rapid drug susceptibility test for urinary tract infections. With this investment, Sysmex acquired 24.99% of Astrego's shares.

By commercializing an innovative rapid drug susceptibility test for urinary tract infections for the primary care market, chiefly clinics, the two companies aim to contribute toward the appropriate selection of antimicrobial drugs, and then to launch the product in advanced countries, including Japan, Europe, and the United States.

As a result of appropriate testing and drug administration resulting from the commercialization and growing adoption of this rapid drug susceptibility test, the companies hope to shorten disease duration and otherwise contribute to patients' quality of life. In addition, they aim to reduce the spread of antimicrobial resistance, help lower medical expenses needed for the treatment of resistant bacterial infections, and contribute to prolonging the life of antimicrobial drugs.

Overview of Astrego

Company name: Astrego Diagnostics AB

Established: March 2017

Line of business: Development of *in vitro* diagnostic products related to drug susceptibility

Location: Uppsala, Sweden

Representative: Ove Öhman, CEO

Terminology

- 1 Drug susceptibility test:
A test to determine the efficacy of various antimicrobial drugs against pathogenic bacteria detected in a sample.
- 2 Urinary tract infections:
The urinary tract runs between the kidneys and the urethral opening. Inflammations due to the incursion of bacteria into the urinary tract are known as urinary tract infections. Such infections can lead to bladder inflammation and pyelonephritis (inflammation of the kidneys).
- 3 "Antimicrobial resistance among uropathogens that cause community-acquired urinary tract infections in women: a nationwide analysis." *Clinical Infectious Diseases*. 2001;33(1):89–94. doi: 10.1086/320880.
- 4 Identification test:
A test to determine the name of bacteria that are the source of an infectious disease detected in a sample.
- 5 Antimicrobial resistance:
This phenomenon occurs when living organisms develop a resistance to a drug, whose efficacy is reduced or nullified as a result. Bacteria that have developed microbial resistance are known as antimicrobial-resistant bacteria.