

## Special Feature

Life Sciences Business—

Contributing to Sustainable Society where people can enjoy health and longevity



The extension of healthy lifespans and the reduction of health-care expenditure are priorities in developed countries. Efforts to achieve these goals are reflected in a trend toward individualized medicine, and in a shift in emphasis from cure to prevention. Individualized medicine enhances the effectiveness of therapies by matching treatment methods more precisely to the condition of each individual patient. To achieve this, doctors can use biopharmaceuticals, which cause fewer side-effects, and advanced, personalized diagnostics to identify conditions and determine which drugs will be the most effective for a specific patient. The shift in emphasis from cure to prevention is helping to reduce the healthcare burden by preventing diseases from occurring, or by discovering them earlier when they do occur. The keys to this approach are the ability to diagnose the potential for diseases, and day-to-day health monitoring.

The JSR Group will respond to these trends by expand-

ing its related activities, especially in the areas of advanced diagnostics and the development and manufacture of biopharmaceuticals.

China is working toward the domestic production of diagnostics for hepatitis, influenza and other infectious diseases. The JSR Group is collaborating with Chinese companies in the development, manufacture and sale of these diagnostics. Our aim is to achieve in-house production in China using JSR raw materials.

In addition to our work in these advanced fields, our strategy also includes the utilization of existing products and technologies in emerging countries.

### Advanced Diagnostics

Companion diagnostics are used to optimize treatment methods for individualized medicine. Designed for external use, they are employed in conjunction with the clinical admin-

istration of pharmaceuticals to carry out prior diagnoses and determine whether or not particular drugs and therapies will be effective. They are used to identify patients who are likely to suffer side-effects. One of the most important measurement methods used involves diagnosis through the detection of disease-related substances adhering to antibodies attached to beads. Diagnostics designed to react to a wide range of antigens can be created by combining the JSR Group's beads technology with antibodies developed by MEDICAL & BIOLOGICAL LABORATORIES CO., LTD.

### Biopharmaceuticals

Biopharmaceuticals include antibody drugs, which are used in the treatment of cancer and other serious diseases. There has been a rapid increase in the development of these drugs in the past few years as they are highly effective and produce minimal side-effects. The JSR Group is contributing to the development of production processes for these biopharmaceuticals. Antibody drugs are extremely large biomolecules. They are cultured using microorganisms and animal cells, and the antibodies are then separated and refined to create pharmaceutical products. Biopharmaceuticals minimize side-effects by using biological and cytological functions that affect only disease sites, such as cancerous cells. At present the development and manufacture of biopharmaceuticals involves complex and expensive processes. The JSR Group is working to overcome these problems so that biopharmaceuticals can become more widely available.

# OUR STRATEGY

## Special Feature

Further expanding our business domains by increasing strategic partners not only in our group, but also linking raw material technologies with end users.

In the area of diagnostics, we have increased our shareholding, and strengthened our collaboration, with MBL, which possesses expertise relating to the use of antigens as biopharmaceuticals. We are also acquiring shareholdings in other companies, such as KBI Biopharma, a developer of biopharmaceutical production processes and a contract developer and manufacturer of biopharmaceuticals in the United States. These investments support our efforts to create new value across all stages of biopharmaceutical manufacturing.

We also plan to commence joint research with Keio University, which has its own hospital. This will allow us to foster collaboration with hospitals and medical professionals.

Our priority for the Life Sciences business was to link functional materials manufactured by the JSR Group with value chains leading to end users. Even if we create useful raw materials, they are unlikely to be adopted by pharmaceutical manufacturers unless there are also effective manufacturing processes for those materials. Our recent joint

acquisition of KBI has given us access to a company with the ability to develop manufacturing processes and carry out actual manufacturing if a pharmaceutical company discovers a substance with medicinal effects. The establishment of this cooperative relationship was the final step in the creation of a value chain linking our functional materials with product development, approval, sales channels and pharmaceutical companies.

\*1 IVD: In Vitro Diagnostics

\*2 JSR-mblVC LifeScience Investment Limited Partnership

