

Emphasis

on new and unique products

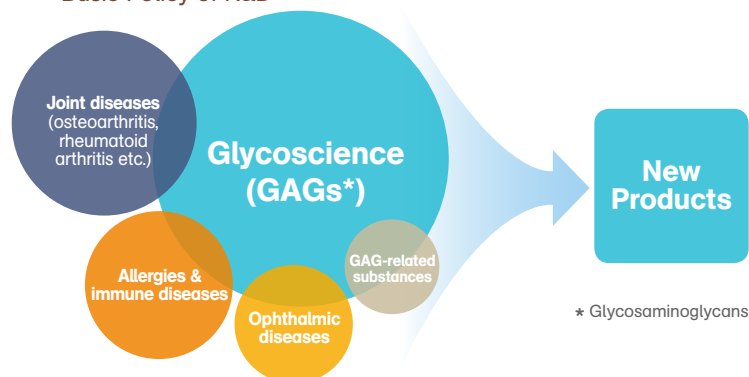
In drug discovery, Seikagaku pursues a unique line—in a field that has only recently gained high-level recognition as a key to understanding life processes. The field is glycoscience, especially glycosaminoglycans (GAGs). Its unique features bring unassailable advantages and present a hurdle to entry by mega pharmaceutical companies.

The majority of pharmaceuticals are low molecular weight compounds. The molecular weights of GAGs, our main focus, are much larger, making them very difficult to handle. Therefore, it requires an extremely high level of specialized knowledge and technology to synthesize, analyze and manufacture GAGs. This difficulty is a major reason why there have been so few applications of GAG research findings to pharmaceuticals.

We have been involved in this field for over 60 years, accumulating expertise and practical achievements as a pioneer developer and manufacturer of the world's first hyaluronic acid formulation.

Currently this field, in which we have an established competitive edge, has a feature that discourages mega competitors from entry: its overall market size is not large in comparison with the typical blockbuster pharmaceutical products. This feature virtually assures that any of the products we create will either be serving unmet needs or serving needs through a compellingly unique mode of action. By concentrating our focus on glycoscience and choosing therapy fields that other companies are unlikely to enter, we will swiftly and continuously develop and release drugs that can compete strongly around the world.

Basic Policy of R&D



Current research aimed at focused expansion

Current research can be characterized as seeking expansion within carefully defined areas of study based on our long involvement with GAGs. The primary field of study remains our long-established focus on joint diseases, including osteoarthritis and rheumatoid arthritis. We aim to raise the probability of successful drug development by utilizing technologies in which we excel. Our target substances are not only GAGs themselves, but also modified GAGs and enzymes that act on GAGs. To power this development forward, Seikagaku has set a target level of R&D spending at around 20% of total sales. This relatively high level for a Japanese pharmaceutical company is sufficient to assure steady creation of new themes to replenish the pipeline.

Our policy on pipeline management is to regularly re-evaluate existing projects in accordance with our basic research policy in terms of success

probability, market size and profit potential. Concentrating on highly-promising research themes, as confirmed by strict evaluation, rather than simply adding more and more themes to the pipeline, raises our chances of success.

Three products in late-stage development

We made steady progress on our projects during the year ended March 31, 2009 and currently have three products in late-stage development. In July 2008, we filed a PMA (premarket approval for medical devices) application with the FDA for Gel-200, an intra-articular (joint) injection for knee osteoarthritis that is expected to provide long-term pain relief with a single injection.

Knee osteoarthritis is an age-related disease, and the number of sufferers is increasing. Gel-200 is expected to give patients in the U.S. the option of minimizing the number of injections required for a treatment. The main ingredient of Gel-200 is cross-linked hyaluronate

hydrogel manufactured using our own cross-linking technology. This feature gives the solution extremely high viscoelasticity, which results in a long-term residual presence in the knee joint cavity. For that reason, a single injection is expected to have efficacy similar to current multiple injection formulations over the same time span.

We are now waiting for the results of the FDA review. We also completed a clinical trial to support marketing, and data from the trial indicated that repeated treatment is safe.

Another late-stage theme is SI-602, an additional indication of SUPARTZ[®] for shoulder osteoarthritis. The Phase III trial was completed, and we submitted an application with the FDA on September 25, 2009. In Japan, ARTZ[®] has already obtained an indication for shoulder peri-arthritis. This theme aims at improving the clinical value of SUPARTZ[®] in the U.S. through lifecycle management, and we are carrying out development with our SUPARTZ[®] sales partner, Smith & Nephew, Inc.

Pipeline

Product	Lead indication	Target market	Pre-clinical	Phase I	Phase II	Phase III	NDA/PMA application	In-house/In-license
Gel-200: Cross-linked hyaluronate hydrogel	Osteoarthritis of knee	U.S.						In-house
SI-602: Additional indication for SUPARTZ [®] (U.S.)	Osteoarthritis of shoulder	U.S.						In-house
SI-6603: Chondroitinase ABC	Lumbar disc herniation	Japan						In-house
		U.S.						
SI-615: Adenosine A3 receptor agonist	Inflammatory diseases (Mainly rheumatoid arthritis)	Japan						In-license (Can-Fite BioPharma)
SI-636*: Anti-VAP-1 antibodies	Inflammatory diseases	Japan						In-license (BioTie Therapies)
New (GAG-related)	Ophthalmic diseases							In-house
New (Core target-related)	Joint diseases							In-house

* Development code has changed from SI-3106 to SI-636.

R&D Activities

While the first two late-stage themes are based on hyaluronic acid, SI-6603 is a formulation of chondroitinase ABC, a GAG-degrading enzyme produced from bacteria. This is a treatment for herniated lumbar discs, a condition by which the nucleus pulposus protrudes from the lumbar disc and comes into contact with surrounding nerves, causing pain or numbness. With a single injection into the herniated disc, it degrades GAGs, the principal component of the nucleus pulposus. As a result, the internal pressure is reduced and the herniated nucleus pulposus recedes, bringing expected alleviation of the pain and numbness. A single injection of SI-6603 is expected to provide efficacy similar to surgery.

Moreover, unlike with surgery, patients will be able to resume their lives relatively quickly. A lower physical burden during treatment and reduced hospitalization is also expected. Target patient enrollment was completed for a Phase II/III clinical trial in Japan, and a Phase II trial is under way in the U.S.

In-licensing boosts potential for new drug discovery

In-licensing and collaborative research and development, over the long run, can strengthen our overall capacity for drug discovery by supplementing the in-house development pipeline. In-licensed from Can-Fite BioPharma Ltd. of Israel, SI-615 is an adenosine A3 receptor agonist based on a novel mechanism. It is now

undergoing a Phase I clinical trial in Japan as an oral treatment for the pain of rheumatoid arthritis.

SI-636, at the pre-clinical stage, is an anti-VAP-1 antibody in-licensed from Biotie Therapies Corp. of Finland. Unlike conventional anti-inflammatory agents, SI-636 inhibits the VAP-1 adhesion molecules, that are said to cause inflammation, offering a highly novel alternative treatment of inflammatory diseases such as rheumatoid arthritis, inflammatory bowel disease and psoriasis. We will review the development policy based on further results.

Pursuing a new and global vision with confidence

We are increasingly confident about our future prospects. Currently, we have two other in-house projects in the pre-clinical stage. Both are GAG-related. They target therapeutic applications in the ophthalmological and joint disease fields. Little

more of them can or should be said at this stage, but, we will supply more information as progress develops.

Ultimately, our competitiveness and value as a “global category pharma” rests heavily on the ability to smoothly and regularly release significant new products into the market. We believe the team and program now in place gives us such a capability.

