

Interview with Executives at King SkyFront No.2

Hideyuki Okano, MD, Ph.D.

Professor

Dean, Keio University School of Medicine

I was a professor at the Faculty of Medicine of Osaka University until 2001. There we discovered stem cells in the human brain for the first time in the world. We began research into treating spinal cord injuries and Parkinson's disease using these cells.

In the past we were unable to carry out genetic modification experiments on primates.

But with Erika Sasaki and others of the Central Institute for Experimental Animals, we succeeded in using marmosets as genetically modified animals for the first time in the world, as reported in Nature in 2009.

This technique allowed us to engineer marmosets with a variety of intractable neurological diseases, which are being used as tools by pharmaceutical companies in developing drugs.

The genetically modified marmoset technology developed in collaboration with the CIEA is the first of its kind in the world.

We are now promoting the technology and transferring it everywhere.

We need to make it available throughout Japan and the world.

The original technology developed here has ample potential to spread.

This will give birth to new partnerships, triggering further innovation.

I think innovation spreads out from a single central core.

I want to further expand the circle of innovation.

We have encountered many incurable diseases.

Things are not so simple that we can find solutions in five or ten years of research.

But even if we can't cure the problems, we can improve the quality of life for patients, or develop treatments that prolong life, which are important missions for us.

So, we mustn't give up thinking it's impossible.

We must move forward one step at a time.

That's my attitude toward research.

We are finally on the verge of finding practical applications for treatments we have developed through fundamental research.

I also want to accelerate research into regenerative medicine using iPS cells.

The advantage of iPS cells is that they are easy to cultivate.

Individual iPS cells are very easy to cultivate.

For example, we could culture iPS cells from patients who are ill to study the mechanisms of that illness.

We must make full use of iPS cells to do things that were impossible to do with ES cells.

On the other hand, there has been slightly more research carried out using ES cells in regenerative medicine.

It's important for people using iPS cells in regenerative medicine to grasp an understanding of past ES cell research before designing their own research.

To study regenerative medicine, all researchers have to cultivate their own cells as seen here.

But you can't start a business and go into production by doing everything manually. You need to develop machines to automate everything and produce standardized iPS cells.

That's when research into creating hearts and pancreases becomes extremely important.

All processes will no doubt get automated.

We have to develop the original product, but when it comes time for mass production, we have to work with engineering researchers and manufacturing technicians.

That's what's needed in the future to start a business using iPS cells.

In that sense, this place offers the ideal environment.

It's close to Tokyo International Airport.

And with the CIEA's move to Tonomachi, with research into life sciences revolving around it, it was chosen by the government as a special area.

And now, all kinds of research institutes and corporations are starting to gather here. It's like the formation of a crystal, and this place is the seed that is attracting many kinds of businesses.

Things that had been scattered are starting to come together, and I have great expectations for improved efficiency in collaborative research.

There's a great advantage in bringing together organizations that were scattered everywhere.

It will allow innovation that was impossible to achieve individually.

People have to feed off one another to stimulate exponential growth.

We will be proactive in assimilating external research, and we would like external researchers and business to assimilate our research, too.

I want to establish new concepts and teamwork in Tonomachi of Kawasaki.

Tsukuba and Kobe are cities that have succeeded in turning themselves into centers for research and medicine.

But I want to create a city that's unlike any other.

I want to make better use of the location, being close to Tokyo International Airport.

And I want to create a place that can provide more practical medicine.

Tonomachi of Kawasaki will become a town with huge potential.

I want to spread innovative medicine and research throughout the world from Tonomachi.