

HAMAMATSU



Licencing agreement between Hamamatsu Photonics K.K. and Bayer Schering Pharma

For development of PET tracers to realize early diagnosis of cancer

Hamamatsu/Berlin, January 8, 2008 – Hamamatsu Photonics K.K. (Teruo Hiruma, Chairman of the Board and CEO, Hamamatsu Shizuoka pref. Japan) and Bayer Schering Pharma (Andreas Fibig, Chairman of the Board of Management, Berlin Germany) have signed a licensing agreement for the use of novel substances in the field of molecular imaging for cancer. Within the agreement, Bayer Schering Pharma acquires the worldwide exclusive rights for research, development and commercialization of a group of molecules that specifically bind to malignant tumor cells. In combination with positron emission tomography (PET), these tracers could potentially improve the diagnosis of a variety of cancers.

“We have developed the novel tumor PET ligand based on a substance to be incorporated into tumor cells through the carrier molecules highly expressed on the tumor cell membrane. Since the chemical structure of this PET ligand is designed not to be identified by the carrier system on the normal cell membrane, the location of tumor tissue can be detected with high contrast in the tumor-bearing animals with PET. We utilized for development of the tumor PET ligand the technology, knowledge and know-how cultured until now.” said Dr. Hideo Tsukada, manager of PET Center, Hamamatsu Photonics.

“With this inlicensing in the field of tumor diagnosis, we ideally expand our existing project portfolio in the area of molecular imaging of cancer“, explained Prof. Dr. Hans Maier, head of the business unit Diagnostic Imaging at Bayer Schering Pharma. „The medical need for a more specific diagnosis of malignant tumors is very high, and BSP anticipates in the long run to further improve the early diagnosis of certain cancers with these substances.“

The substances described in the agreement specifically bind to cancerous cells in the body. The tracers are labeled with a short-life radionuclide and thus can be employed for PET imaging. PET is a nuclear medicine imaging procedure, with which molecular processes can be visualized in vivo, for example those in tumor cells. In contrast to the presently common procedures in PET imaging of cancer, these new PET tracers could help to possibly better differentiate malignant tumors from benign tissue alterations and to allow a more precise staging of the cancer.

About cancer diagnosis

In Japan, cancer is the leading cause of death since 1981 and 329 thousand of patients are annually led to decease in these years according to the Monthly Population Survey Report 2006 by Ministry of Health, Labour and Welfare. This occupies 1/3 of the overall cause of death in Japan and implies that cancer is becoming their life-threatening issue. An increase of patients with cancer is also a global issue and one of the international institutes of cancer which affiliates WHO reported that cancer will be the leading cause of death in 2010 in the world. The diagnosis and especially the accurate staging of the tumor expansion play a decisive role for prognosis and therefore therapy decision.

The understanding of the various mechanisms of cancer grows steadily. It is therefore known today that there are differences in the metabolism and growth regulation between cancerous cells and normal cells. This can be diagnostically used for a targeted detection of tumors.

To date, the most established tracer in the field of PET for staging of malignant tumors, e.g. lung cancer, is a sugar tagged with radioactive fluorine, the so called F18-desoxy glucose, abbreviated FDG. This sugar is particularly taken up by fast growing cells and used in metabolic processes. It allows the detection of tumor cells but also other proliferating and metabolically active cells of the tissue via PET imaging. However, the differentiation between malignant tumor cells and other (benign) alterations of the tissue is limited. Tracer molecules which mainly target tumor cells could allow a more specific diagnosis and more precise staging of cancer in the future.

Molecular imaging at Bayer Schering Pharma

Molecular imaging comprises diagnostic procedures that in particular allow the detection of early disease stages on a cellular and molecular level, potentially even before they become clinically manifest. Such procedures are expected to provide not only earlier but

also more accurate detection of, for example, tumors and central nervous system disorders. In the field of molecular imaging, Bayer Schering Pharma is pursuing promising approaches with innovative carrier molecules that bind specifically to certain cell structures. This will facilitate the development of procedures for visualizing disease-specific biological processes on a molecular level. The diagnosis of neurodegenerative, oncological and cardiovascular diseases is the company's main focus of research. Bayer Schering Pharma maintains various research cooperations in the field of molecular imaging, amongst others with Stanford University as well as ETH Zurich and Nagasaki University.

About Hamamatsu Photonics

Hamamatsu Photonics K.K. (Japan) is a leading manufacturer of devices for the generation and measurement of infrared, visible, and ultraviolet light. These devices include photomultiplier tubes, scientific light sources, opto-semiconductors, cameras, and specialized imaging systems. Hamamatsu Photonics is dedicated to the advancement of photonics through extensive research. This corporate philosophy results in state-of-the-art products which are used throughout the world in scientific, industrial, and commercial applications.

About Bayer Schering Pharma

The Bayer Group is a global enterprise with core competencies in the fields of health care, nutrition and high-tech materials. Bayer HealthCare, a subsidiary of Bayer AG, is one of the world's leading, innovative companies in the healthcare and medical products industry and is based in Leverkusen, Germany. The company combines the global activities of the Animal Health, Consumer Care, Diabetes Care and Pharmaceuticals divisions. The pharmaceuticals business operates under the name Bayer Schering Pharma. Bayer HealthCare's aim is to discover and manufacture products that will improve human and animal health worldwide. Find more information at www.bayerhealthcare.com.

Bayer Schering Pharma is a worldwide leading specialty pharmaceutical company. Its research and business activities are focused on the following areas: Diagnostic Imaging, General Medicine, Specialty Medicine and Women's Healthcare. With innovative products, Bayer Schering Pharma aims for leading positions in specialized markets worldwide. Using new ideas, Bayer Schering Pharma aims to make a contribution to medical progress and strives to improve the quality of life. Find more information at www.bayerscheringpharma.de.

Forward-Looking Statements

This release may contain forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.