

Joining forces in the battle against cancer, myocardial infarction or Alzheimer's disease

Together with the German Federal Ministry of Research and Education, five German pharmaceutical and medical device companies are starting the "Technology Initiative Molecular Imaging"

Early detection of cancer, Alzheimer's or cardiovascular diseases, effective therapies and greater efficiency throughout the healthcare system – these are the key goals of the "Technology Initiative - Molecular Imaging" which was set forth today by five leading pharmaceutical and medical device companies as well as the German Federal Ministry of Research and Education (BMBF). Bayer Schering Pharma, Boehringer Ingelheim Pharma, Siemens Medical Solutions, Karl Storz and Carl Zeiss will spend a total of 750 million Euros during the next ten years for the development of new methods in molecular imaging. In the next six years, BMBF will also promote cooperative R&D projects in the amount of 150 million Euros.

The initiative will smooth the way for innovative products and services in healthcare by intensifying the exchange between basic academic research and industrial research and development activities in the area of molecular diagnostics. In addition, this alliance opens new doors in the arena of international competition: German corporations are already market and technology leaders in medical device manufacturing as well as in the diagnostic contrast medium market – with 100.000 highly qualified job positions in Germany as well as an export quota of more than 75 percent. The collaboration will further elevate the country's prominence as a home for innovative medical technology development. As the Federal Minister of Education and Research, Annette Schavan, explains: "For every Euro spent by public research funding, the economy spends five Euros. This is how we successfully implement the high-tech strategy of our government. We consolidate our strengths and invest in future technologies. Men and women will benefit from the research results in molecular imaging, because they will help us to treat diseases earlier and better in the future."

Molecular imaging: on the trail of suspicious molecules

Molecular imaging is one of the most promising areas in medicine: it helps visualize pathological processes in the body on the cellular level – and at times long before the first

symptoms become apparent. By injecting new diagnostic compounds, suspicious molecules such as proteins produced by cancer cells can be marked. Using innovative imaging systems, like combination positron emission tomography and computed tomography (PET/CT), conspicuous areas in the body can be visualized and localized at millimeter accuracy. Tying it all together, information technology solutions will help researchers evaluate, prepare and publish their findings, which could ultimately affect how physicians treat their patients.

The opportunities for molecular imaging in an area like oncology are tremendous. It is already known today that, through their production of protein, certain types of cancer can be detected in the body up to ten years before they develop into visible or palpable tumors. If the proteins can be detected early then therapies can be planned better and targeted more accurately. And last but not least, molecular imaging can help physicians better monitor the course of treatments and thus help researchers validate investigational new drugs.

Additional opportunity is found in the early detection of cardiovascular disease or dementia, for example, Alzheimer's disease. Today, the disease affects approximately 16 million people, worldwide. At present, the disease can only be diagnosed at its most advanced stage, when the patient is already suffering from distinct cognitive impairments. Presently, new diagnostic tracers are undergoing clinical testing. And they may one day allow for diagnosis before the patient shows any symptoms.

Joint research on behalf of innovations

The corporations participating in the technology initiative combine the three core areas of molecular imaging: diagnostic products, imaging systems and information technology.

"Bayer Schering Pharma is a pioneer in the area of contrast medium research. Molecular imaging is one of the foci of our research activities. We are working on the development of innovative PET tracers, for example, for oncological and neurodegenerative diseases," explains Prof. Dr. Andreas Busch, chairman for research at **Bayer Schering Pharma AG**. Developments of such complexity require the close cooperation of interdisciplinary teams from the sciences, medicine, and engineering. "We are happy to add our long-term experience in the pharmaceutical development of active ingredients to the 'Technology Initiative Molecular Imaging'," adds Busch.

"The intense cooperation between industry and the sciences is the most important element for quickly transferring scientific knowledge to the clinical routine," underscores Dr. André

Hertkorn, head of the medical group of **Boehringer Ingelheim Pharma GmbH & Co. KG**. “Molecular imaging is going to make non-clinical as well as clinical research faster and safer and is going to promote innovations.” Research will be located where technology and expert knowledge are present and where the general legal framework remains practicable when compared to an international level.

Molecular in-vivo imaging - closely meshed with innovative in-vitro technology – will lead to an earlier, far more individualized and therefore more effective diagnosis and therapy while modern information technology ensures a smooth data flow beginning with prevention and continuing with diagnosis and therapy and ending in after-care,” emphasizes Professor Erich R. Reinhardt, member of the Board of **Siemens AG** and president and CEO of Siemens Medical Solutions. “The increase in quality of care is matched by lower costs in healthcare – and opens up new ways to make the healthcare system fit for the challenges of the future.“

The family-owned company **KARL STORZ** holds a leading position in the worldwide endoscopy market. Karl-Christian Storz, member of the Executive Board, stresses that “innovative strength combined with the acceptance of social responsibilities and sustainable actions manifests itself especially in mid-sized companies and is reflected in competitiveness across the international market. The history of their company shows how this protects Germany and creates jobs.“ The basis for this, namely innovative ability, is greatly strengthened due to the initiative of the German government.

Carl Zeiss is a world leader in optics. Through innovative methods and new microscope systems that are able to visualize previously undetected cellular events, Carl Zeiss is laying the cornerstone for advances in molecular imaging. These technologies are key to diagnosing diseases earlier, more specifically as well as safer and improving the therapeutic process at the same time. As summed up by the member of the board, Dr. Michael Kaschke: “Optical technologies by ZEISS are an essential component to detect diseases such as cancer or Alzheimer’s faster and better and cure them. It is our objective to move these new methods and systems quickly out of the area of research and into clinical application.“

More information can be obtained by visiting <http://www.bmbf.de/mobitech>.



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