We do everything to deliver what really counts
Molecular Imaging has the potential to define the boundaries of personalized medicine. By providing information, individualized to the particular patient and his/her disease, Nuclear Molecular Imaging is expected to improve the understanding of key disease characteristics that will in turn lead to safer and better therapies.

Prof. Chaitanya Divgi, Professor of Radiology; Professor of Radiation Oncology, Hospital of the University of Pennsylvania, Philadelphia, USA

During the last decade, remarkable progress has been achieved in health care delivery and patient management. This progress has encompassed the major areas of oncology and cardiovascular disease, as well as the pathologies of the central nervous system. With improvement in diagnostic accuracy and precision, accurate staging of disease and early intervention/treatment have become hallmarks of modern patient management. Stimulated by the identification of the entire human genome, many new branches of science, now often described as the “omics” (proteomics, transcriptomics, metabolomics, pharmacogenomics, etc.), have highlighted the variability of genomic translation into the phenotype of the individual.

The concept of personalized medicine has evolved, arising from the understanding that treatment and response are indeed highly unique and person specific.

Opportunities now exist for the application of nuclear medicine and Molecular Imaging technologies to the investigation of the individual patient, in early staging and restaging, risk assessment, target identification and treatment monitoring.
These opportunities are based on the following considerations:

- Early disease staging is needed but is currently insufficient to permit specific treatment.
- Target identification in vivo in the intact being is required prior to treatment.
- Imaging is essential – serum markers are too global.
- Less than 40% of all drugs given as therapy are effective.
- In many circumstances, in the absence of imaging it is difficult for the physician to choose the best therapy at the first time of asking.
- Determination of a biologically effective dose will be significantly facilitated by imaging.

The ability to identify the molecular profile of an individual is a key goal, and an array of novel targeted technologies are being developed for this purpose. It is against this background that the concept of Molecular Imaging has emerged. Molecular Imaging was recently defined by the Society of Nuclear Medicine (SNM) as, “the visualization, characterization and measurement of biological processes at the molecular and cellular levels in humans and other living systems.” The SNM further elaborates: “Molecular Imaging typically includes two- or three-dimensional imaging as well as quantification over time. The techniques used include radiotracer imaging/ nuclear medicine, MRI, MRS, optical imaging, ultrasound and others.”

The technologies of PET and SPECT continue to have unique advantages in this context, with exquisite picomolar sensitivity and availability of a growing range of molecules which address major and relevant biological signaling in man, e.g.:

- Cellular proliferation
- Cellular migration (white cells)
- Cellular migration (stem cells)
- Beta cells
- Cytokines
- Glucose metabolism
- Protein synthesis and transport
- Amino acid metabolism
- Receptor imaging
- Multidrug resistance (MDR)
- Hypoxia
- Angiogenesis
- Apoptosis
- Necrosis

A commitment to both PET and SPECT technologies, with the associated multimodality approaches via SPECT/CT, PET/CT or PET/MR and others, will ensure that the reality of molecular imaging will be translated into individual patient benefit.

Effectiveness of drugs prescribed in the USA

<table>
<thead>
<tr>
<th>Standard drug treatment of:</th>
<th>Effectiveness*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-small-cell lung cancer</td>
<td>15%</td>
</tr>
<tr>
<td>Cancer, average for all types</td>
<td>25%</td>
</tr>
<tr>
<td>Alzheimer’s disease</td>
<td>30%</td>
</tr>
<tr>
<td>Cardiovascular diseases**</td>
<td>30%</td>
</tr>
<tr>
<td>Incontinence</td>
<td>40%</td>
</tr>
<tr>
<td>Oestoporosis</td>
<td>48%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>57%</td>
</tr>
<tr>
<td>Asthma</td>
<td>60%</td>
</tr>
</tbody>
</table>

* measured as efficacy or first year survival rate
** treatment with ACE inhibitors or beta blockers

Source: Brian B Spear, “Clinical Application of Pharmacogenetics”, Trends in Molecular Medicine, May 2001
Taking you and Molecular Imaging further

“ We looked for a partner to make APOSENSE® 18F-ML-10, our agent for PET imaging of apoptosis, a commercially available radiopharmaceutical product. IBA stood out as the ideal partner for this critical task. Our collaboration with IBA will facilitate the development and optimization of the radiochemistry and processes for GMP-grade radiolabeling and distribution of ML-10, to the standards of the most demanding end-user.”

Yoram Ashery, CEO, Aposense Ltd.

IBA is driven by the vision that Molecular Imaging has reached only a fraction of its full potential. We share the enormous energy and hope that invigorates the medical community worldwide in the quest for a more personalized and effective medicine through accurate molecular diagnosis. As industrial player, we feel it is our responsibility to play our role in the innovation chain by bringing new diagnostic and therapeutic methods to the market, for the benefit of the patient, the medical community and our company.

The realization of our R&D efforts translates in 8 products being launched by 2011. Among our innovations will be new drugs which will significantly enlarge the perimeter of Nuclear Medicine.

• In Urology, 124I-cG250, marker of renal carcinoma, is expected to reshape the reading of doubtful renal masses images and the way renal cancer is managed.
• Molecular Imaging also offers the perspective of imaging apoptosis. In collaboration with Aposense®, IBA is currently developing a new tracer that selectively targets cells undergoing apoptosis and accumulates within cells undergoing apoptosis from its early stages. These developments are expected to provide new and decisive insights for the cancer-fighting effort.

Driven by the exciting opportunity to make a more personalized and effective medicine a reality, our teams and our partners across the world are dedicated to further transform the potential of our pipeline in innovative pharmaceutical solutions to protect, enhance and save lives.

Enlarging the horizon of Nuclear Medicine
Our development pipeline integrates innovations in:

> Oncology
> Cardiology
> Neurology
> Inflammation
> Diabetes

05 IBA Molecular
Delivering service and quality every day

You focus on your patients, not on your FDG deliveries

Our belief is that, before anything else, reliability and service quality are the legitimate key expectations of our customers. And, aware of the consequences of an unreliable supply of PET isotopes, we have taken the position to invest in the setup of the most advanced PET distribution network and the only worldwide PET distribution network.

Providing FDG to major PET centers across Europe requires much more than operating a cyclotron. The IBA Molecular team has taken the steps to ensure trouble-free PET scans to you and your patients thanks to reliable and predictable supply and eased service processes.

A unique network
IBA operates today a network of 46 PET isotopes facilities, making this network unique in size and scope. The density of this web allows us to offer customers a backup supply with identical product, from a secondary site with minimal disturbance to their activity.

We are delighted with our collaboration with IBA, who provides us with a very high level of reliability and dedication."

Prof. Roland Hustinx,
Head of Nuclear Medicine,
Liège University Hospital, Belgium

Leading edge radiopharmacies
Thanks to the cumulated experience of delivering several hundreds of FDG doses daily to major PET centers, we are able to develop Best Practices for the production of PET isotopes across our network. Escalated, tested and re-structured at central level, these best practices are then deployed across our production network and allow us to improve the service to our customers in an accelerated way.

F18 production
• Dual cyclotrons vault (in some facilities)
• Strictest preventive and corrective maintenances
• Worldwide IBA acceleration experts on demand
• On-site cyclotron engineer
• Remote troubleshooting (in most facilities)

Quality Control
• Redundant QC equipment
• Dedicated QC staff
• Pre-transportation release

Synthesis
• Redundant chemistry modules
• Specialized synthesis technicians
• European Best Practice on synthesis procedures
• Highest yield Synthera™ modules (in some facilities)

Dispensing
• Expert technician operator
• Trouble shooting procedures

Delivery
• Dedicated deliveries
• Certified transportation companies
• Breakdown, traffic and emergency notification capabilities
• Real-time geopositioning of the carriers (in some facilities)
Fulfilling the needs of our customers can not be conceived in part only. Our product offering reflects our commitment to offer a complete radiopharmaceutical solution to nuclearists, from widespread to niche indications. With major applications in Oncology, Cardiology and Neurology, in PET, SPECT and Therapy, our range is one of the most comprehensive in the industry.

Pharmaceutical excellence

you can rely on

Committed to the development of Nuclear Medicine and to the high quality of supply to its customers, IBA is placing a relentless focus on the quality of its production. In order to keep up with the strictest standards in pharmaceutical and safety policies, we are currently deploying an ambitious global investment plan. More than EUR 60 million have been dedicated to the upgrade of our SPECT and therapy manufacturing facilities in Saclay, France. Additionally a central control QA organisation ensures that the highest level of quality and safety is reached in all our cGMP facilities.

Worldwide access to radiopharmaceuticals

IBA makes its products available through in time and reliable delivery in the major areas of the world. From its central cGMP SPECT radiopharmaceutical facility in Saclay and from its local PET radiopharmaceutical facilities, IBA Molecular supplies every day the major Nuclear Medicine departments of the world.

Fulfilling the needs of our customers can not be conceived in part only. Our product offering reflects our commitment to offer a complete radiopharmaceutical solution to nuclearists, from widespread to niche indications. With major applications in Oncology, Cardiology and Neurology, in PET, SPECT and Therapy, our range is one of the most comprehensive in the industry.

Offering a comprehensive range in Nuclear Medicine
PET Radiopharmaceuticals

- Angiosis®
- Cardioscan-B®
- Cardiolite®
- Isocide-129
- Zidovudine-129
- Vascograin®

SPECT and Therapy

- Angiosis®
- Cardioscan-B®
- Cardiolite®
- Isocide-129
- Vascograin®

Radiochemicals

- Angiosis®
- Cardioscan-B®
- Cardiolite®
- Isocide-129
- Vascograin®

Accessories

- Contell®
- Contell®-SP
- Prefell®
- Radoncore, Delivery System Venticis® II
- Radiolite, System.

The availability of these products is dependent upon their registration status in each country. Please contact your local IBA Molecular representative for more information. Please refer to the Summary of Product Characteristics available on www.iba-molecular.com for complete product information.
Acquiring a cyclotron is only the first step in a complex project. Several processes and equipment must be integrated into a cost effective and performing solution. For many years, our large team of experts is providing the BEST SUPPORT to achieve your fully compliant GMP center.

Delphine Blampain
Manager Facility and Process Engineering
IBA Molecular

Cyclotrons solutions: equipment and support from project to reality

Based on 23 years of expertise, IBA offers a global solution for your radioisotopes production.

R&D Endless innovation
IBA offers cyclotron users the ability to increase their research and development capacity in the development of new tracers with a range of Vectio® beam transport line.
- Mini-tube
- 1.5m
- 6m

...thanks to a wide range of Pinctada® synthesis chemistry modules
- Pinctada® Acetate
- Pinctada® Ammonia
- Pinctada® Water
- Pinctada® Oxygen 15
- Pinctada® HCN
- Pinctada® Gallium
- Pinctada® Thallium
- Pinctada® Indium
- Terumo® Iodine 123
- Terumo® Iodine 124

An extended range of Nirta® targetry system is also available for your F18 production and for your research needs:
- Nirta® Fluor: S-M-L-XL-2XL-3XL size
- Nirta® Carbon
- Nirta® Ammonia
- Nirta® Fluorine
- Nirta® Oxygen
- Nirta® Solid compact four the production of non-conventional radio-isotopes
- Nirta® Iodine 123

IBA cyclotrons are controlled through a very user friendly software:
- remote diagnosis
- auto-start capacity
- SMS alarm notification

Fully compliant GMP center
Key figures

IBA Molecular Headcount
Of a total of more than 2000 people working for IBA Group, over 1000 persons work to deliver every day quality radiopharmaceuticals to our customers.

IBA Molecular R&D spend
To realise the full potential of Molecular Imaging, we feel as industrial player, that it is our responsibility to steer our resources towards the development of Nuclear Medicine. In 2007, an impressive 25% of the IBA Molecular Europe revenues were invested in the extension of our industrial capabilities and in the development of new tracers.

IBA Molecular revenues and contribution of IBA Molecular:

Revenues*
• IBA Group revenues and contribution of IBA Molecular: 100%

IBA Molecular revenues by region:

IBA Molecular revenues by product line:

25% Percentage of 2007 IBA Molecular Europe revenues invested in R&D and network development

Management executives

IBA Group
1. Pierre Mottet, Managing Director and Chief Executive Officer, IBA Group, based in Louvain-La-Neuve, Belgium
2. Yves Jongen, Managing Director and Chief Research Officer, IBA Group, based in Louvain-La-Neuve, Belgium
5. Renaud Dehareng, Co-President, IBA Molecular Europe, based in Saclay, France
6. Bernard Reculeau, Co-President, IBA Molecular Europe, based in Saclay, France
7. Manoj Sahasrabudhe, President, IBA Molecular Asia, based in Mumbai, India
8. Olivier Van der Borght, Vice President Sales & Marketing, IBA Molecular Cyclotrons Solutions, based in Louvain-La-Neuve, Belgium

IBA Molecular
3. Olivier Legrain, President, IBA Molecular, based in Saclay, France
4. Anwer Rizvi, President, IBA Molecular Northern America, based in Sterling, Virginia, USA

* 2007 Figures in EUR million, consolidation including CISBO
1986
IBA starts as a spin-off of the Cyclotron Research Center of the Catholic University of Louvain-la-Neuve (the UCL in Belgium), which produced its first cyclotron in 1947. The objective is to exploit a unique expertise in particle accelerator technology, to meet growing needs in the fields of medicine and industry.

2001
IBA becomes the majority shareholder of Eastern Isotopes, Inc., founded in 1993 in Sterling (Virginia, USA) and leader in the distribution of PET imaging agents in USA.

2004
Eastern Isotopes becomes a wholly owned subsidiary of IBA.

2006
All PET Radiopharmaceuticals & Isotopes activities of IBA and Eastern Isotopes, along with the cyclotron solutions, transition to the new IBA Molecular business unit.

2008
IBA fully acquires the CISBIO organization, extending further the perimeter of its radiopharmaceutical activities, with a complete line of SPECT radiopharmaceuticals and 6 additional FDG production facilities in France.

And beyond
IBA continues to expand its network where its technology and know-how can improve the service to Nuclear Medicine centers and ease the situation of the patients. At the same time, the maturation of its R&D pipeline allows IBA to make innovative tracers available in major medical fields, allowing the medical community to provide safer and more effective patient care.

Locations and contacts

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info@cisbio.de
www.iba-molecular.de

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IBA: opening new ways in healthcare with a focus on fighting cancer

IBA develops and markets leading-edge technologies, pharmaceuticals and tailor-made solutions for healthcare, with a focus on cancer diagnosis and therapy… Leveraging on its scientific expertise, IBA is also active in the field of industrial sterilization and ionization. IBA Group is present worldwide with over 2,000 persons in 40 locations.

Diagnosis: making molecular medicine a reality
IBA has unique expertise in the design of cyclotrons and in the production and distribution of radiopharmaceutical tracers which are used every day in thousands of hospitals worldwide, to quickly and accurately detect cancer, neurological and cardiac diseases. IBA also offers solutions for drug discovery and in vitro diagnostics.

Particle Therapy: the next frontier in cancer therapy
IBA is the undisputed leader in particle therapy, acknowledged to be the most precise and effective clinical radiotherapy method in the selective destruction of cancer cells. To date, more than 11 world renowned medical institutions have built a Particle Therapy Centre with IBA.

The fastest and most accurate Dosimetry solutions
IBA develops innovative, precise and high quality equipment for use in hospitals and by industry partners worldwide. IBA offers a full range of measuring instruments and software that enable radiologists to perform the necessary checking and calibration procedures.

Environmentally friendly Sterilization & Ionization
IBA is designing electron accelerators and high power X-ray solutions used in many industries to sterilize medical devices, to cold pasteurize food products and to improve the properties of polymers. Over 220 IBA Industrial accelerators are used in the world, many of which have been in use for several decades.