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New Roles in Research Capabilities Organization Europe

PHARMACEUTICAL R&D BEERSE



Assignment Brief

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RPI 1209/1210

September 2010

THE COMPANY

Johnson & Johnson, founded in 1886, is the world's most comprehensive and broadly based manufacturer of health care products, as well as a provider of related services, for the consumer, pharmaceutical and medical devices and diagnostics markets. Johnson & Johnson has more than 200 operating companies in 57 countries around the world employing 109,100 employees and selling products in more than 175 countries. The fundamental objective of Johnson & Johnson is to provide scientifically sound, high quality products and services to help heal, cure disease and improve the quality of life. Johnson & Johnson's pharmaceutical businesses operate under the **Janssen** name.

A global leader in pharmaceutical R&D, **Janssen's Research & Development** develops treatments that improve the health and lifestyles of people worldwide. Since 2009, the Company focuses on 5 therapeutic area's: neuroscience, immunology, oncology, anti-infectives, cardiovascular/metabolic disorders.

Janssen's main R&D site in Europe is in **Beerse, Belgium**. The site was created in the 1950's by Dr. Paul Janssen, one of the most successful drug hunters of all time. Over the last few years, the Company has made, and continues to make, very substantial investment in the development of new facilities at the Beerse site. This relates to the construction of two state-of-the-art buildings, the Discovery Research Centre (DRC) and the Drug Safety Evaluation Centre (DSEC). These developments show the continued and indeed increasing importance that the US parent company Johnson & Johnson accords to the European R&D site.

Janssen R&D in Beerse has a long-standing reputation for innovative and successful research. Over the years, research emanating from Beerse has resulted in many market-leading drugs in anaesthesia, pain, neurology, psychiatry, mycology, motility disorders and other G-I disorders. For a number of years the Beerse site has focused on Discovery Research in several core disease areas, primarily: CNS, Oncology and Metabolic Diseases/Internal Medicine. Recent global reorganisation and therapeutic area site alignment within Janssen means that the Virology group (formerly Tibotec) has been integrated into the main R&D facility, thus further strengthening the Beerse site. The Beerse site now therefore focuses on Research and Early Development in Neuroscience, Oncology and Infectious Disease (Virology and Vaccines).

For further information, please visit the Company website: www.janssenpharmaceutica.com

NEW RCO ROLES

RCO

Janssen R&D's global **Research Capabilities Organization (RCO)** was established in 2009, and consists of three regional Research Capabilities organizations in Europe, East Coast USA and West Coast USA. Its mission is to ensure that the company's R&D resources and capabilities in small molecule chemistry and enabling technologies are leveraged consistently and effectively across all five therapeutic areas; and that resources are aligned regionally and in close collaboration with the respective therapeutic areas.

RCO in Europe comprises around 400 scientists in the following overall divisions/functions:

- Enabling Biology
- Medicinal Chemistry (incl. Toledo, Spain and Val de Reuil, France sites)
- Research Informatics & Integrative Genomics
- Cardiovascular Safety Research
- Enabling Scientific Operations.

Following review of the existing capabilities and skill sets within RCO in Europe against the requirements for the future to facilitate an efficient, streamlined, successful discovery effort, certain key strategic recruitments were identified, leading to the creation of the following four roles:

- 1. Systems Biology Scientist (Research Informatics & Integrated Genomics)**
- 2. Phenotypic and High Content Screening Expert (eBiology)**
- 3. High Content Image Capture, Analysis and Data mining Expert (eBiology)**
- 4. Expert in Immunology-based Assays (eBiology)**

These roles reflect a redefinition of the needs of the capabilities required to support current research, leveraging a cross-functional expertise in a systems biology approach to the various phases of the compound discovery process within a highly matrixed structure.

Based at Beerse, these roles will be supporting the three therapy areas covered in Europe: Oncology, Neuroscience, and Infectious Diseases (now also including vaccines due to the collaboration with Crucell). However, as part of a global RC organization, scientists in these roles will also interact with and tap into comparable functional resources within Janssen R&D in the US. While they will be located within the RC organization in Europe, they will work closely with the TA groups, and depending on project needs, be part of TA project teams.

1. Systems Biologist

Background

In several of the strategic disease areas where the company is active, it is now believed that drug discovery will provide more robust and safe therapeutics by moving from a reductionist, single target view to an integrative pathway/networks approach. Recent advances have shown the predictive value of probabilistic network control models that integrate experimental data and biological and disease knowledge. Combined with interpretational skills based on cellular, molecular and disease biology knowledge, clear gains can be

expected from such systems biology approaches in several components of the discovery chain: at its onset, for the identification of therapeutically relevant cellular processes and molecular readouts; after compound selection for the identification of its mechanisms of action and non-pharmacological side effects; and for the early articulation of the benefits of polypharmacology.

The Role

To bridge the gaps between experimental evidence, especially from high-dimensional platforms (-omics), actual scientific knowledge, and objectives of the compound discovery teams, the company wishes to recruit in the Research Informatics & Integrated Genomics group a scientist with skills that combine state-of-the-art computational biology modelling with solidly reasoned interpretation of experimental results in discovery models.

The Profile

- PhD or MD/PhD in Molecular or Cell Biology or related field.
- A proven track record in experimental disease models is an advantage.
- Experience in the pharma/life science industry is desirable.
- Solid experience and strong understanding of probabilistic computing modelling of (heterogeneous) genome-scale data and biological (pathway) information using, among others, bayesian network methodologies.
- Proficiency in the use of computational and visualization tools for the analysis of high-dimensional data.
- Experience with analysis of biology of the diseased state with the clear ability, while liaising with discovery biologist team members, to identify testable hypotheses to corroborate the proposed biological control system, in a relevant fashion for the therapeutic area goals.
- Excellent interpersonal, networking and communication skills - the ability to operate in a team setting within a complex, matrix, multicultural environment and to interact with people at all levels within the organization and externally
- Excellent command of English, spoken and written.

2. Translational Phenotypic and High Content Screening (HCS) Expert

Background

Over the past years the company's HCS platforms have been successfully used to support phenotypic screening projects in three therapeutic areas. There is a clear strategic desire to improve the clinical predictivity of compound screening and profiling assays by harnessing more systematically the information content in and around these phenotypic assays. This implies an evolution from screening on the basis of single or limited parameter readouts to the use of phenotypes built on multivariate cellular features that are analyzed with state-of-the-art computational techniques going from predetermined classifier to machine learning approaches. When merged with molecular pathway information through the judicious use of molecular probes, the systematic mapping of the critical determinants of the underlying

mechanism(s) of action leads to more robust comparative and predictive validation of targets and compounds. .

The Role

The company therefore wants to recruit a HCS expert in the Enabling Biology Group, who will be responsible for the conversion of knowledge of in vitro models of normal and disease cell biology and of critical pathway network information about the targeted phenotype, into a robust, informative, practical profiling and screening assay systems. He/she will function across different therapeutic areas, thereby supporting several projects bridging results generated in different teams and biological interpretations. He/she will work closely with a High Content Image Capture, Analysis and Data Mining Expert, He/she will also support the scouting for scientific and technical developments in this field to invest in appropriate state-of-the-art platforms and help identify/evaluate potential external collaborators.

The Profile

- PhD in Medical Sciences, Biology, or related fields.
- Experience in the pharmaceutical/life science industry is highly desirable.
- Hands-on scientist with a solid track record in experimental high content screening and molecular biology readout techniques together with a solid knowledge of the biology of signal-transduction in (primary) cell culture and a grounding in systems biology modelling of pathway function.
- The drive and capability to work together with discovery teams of different therapeutic areas to translate a therapeutic objective into a practical assay approach, with the Systems Biologist to identify the most informative molecular readouts and with the High Content Image Capture, Analysis and Data Mining Expert to translate HCS data into biologically meaningful information.
- Combining solid experimental interpretation and data analysis skills with a critical flexible and open mindset to optimize and evolve experimental screening approaches within and across projects in a way that is consistent with the discovery team objectives.
- Experience in the implementation of new technology platforms in the field.
- Excellent interpersonal, networking and communication skills - the ability to operate in a team setting within a complex, matrix, multicultural environment and to interact with people at all levels within the organization and externally.
- Excellent command of English, spoken and written.

2. High Content Image Capture, Analysis and Data Mining Expert

Background

With the growing use of High Content Screening (HCS) in drug discovery, especially when driven by a systems biology approach to cellular phenotyping combined with functional mapping with RNAi platforms, image informatics and analysis skills have come to the forefront as critical components to transform HCS data and images into valuable information

and knowledge for decision making in compound selection and validation. There is especially a growing need to identify informatics approaches that marry solid data quality and robustness with the flexibility to take advantage of the richness of the phenotypic features, especially when coupled to multi-parametric probes that identify critical pathway network nodes for the targeted biological functions.

The role

The company therefore wish to appoint a High Content Image Capture, Analysis and Data Mining Expert to exploit efficiently image informatics for HCS, especially at the interface with systems biology derived multi-parameter molecular readouts. He/she will work closely with a Translational Phenotypic and HCS Expert, with scientists in the Research Informatics & Integrated Genomics group and with biologists from different therapeutic areas to identify and build prototype and systematic readout algorithms appropriate for the biological objectives of the discovery projects. Building on data management expertise to federate HCS and other relevant data-types (pathway, chemical), he/she will provide efficient analytical and visualisation solutions for quality assessment and for the selection and quantitative mining of phenotypic parameter readouts and their modelling with appropriate pathway readouts, He/she will be expected to keep the organization up to date on computational methods in this field and be involved in identifying and evaluating potential external collaborators. He/she will also lead the interface with internal informatics support and external consultants in image analysis.

The profile

- PhD in Cellular Biology, Bioinformatics, Information Sciences, Bioengineering.
- Good knowledge of experimental HCS techniques
- Solid experience in data management tools for biological images and related data-types
- Thorough knowledge of computational and statistical tools and modelling in biological imaging.
- Track record of hands-on prototyping and development of computational tools within a pharmaceutical/life science industrial setting is a plus.
- Experience in classification and factor analysis approaches that link complex phenotypes to a systems biology determination of networked pathway is a strong plus.
- Excellent interpersonal, networking and communication skills - the ability to operate in a team setting within a complex, matrix, multicultural environment and to interact with people at all levels within the organization and externally.
- Excellent command of English, spoken and written.

4. Expert in Immunology-based Assays

Background

There is increased need for the small compound biology capability to support the profiling and screening of immune-modulating compounds using state-of-the-art readout platforms that effectively harness primary immune cell biology. This is driven by the strategies of the Infectious Diseases Therapeutic Area with a more systematic focus on modulating host

response to treat chronic viral infection and of the Oncology Therapeutic Area with a strategic focus on new therapeutics impacting the tumor microenvironment.

The Role

The company therefore wishes to recruit an immunology expert who will operate from within the Enabling Biology group supporting immunology-based assays in drug discovery or development projects. He/she will provide expert support to compound discovery teams on immune cell functional and molecular assays, especially on multiparametric flow cytometric assays. One of his/her major challenges will be to collaborate with other cross-functional discovery support teams on the translation of systems biology approaches to host response into assays for compound profiling. Depending on the project he/she will actively contribute to or lead the development of the scientific and experimental strategy of drug discovery teams. He/she will be responsible for the identification and implementation of new technology platforms to support cross-therapeutic area interests in immunology-based assays.

The Profile

- MD/PhD or PhD in Medical Sciences, Biology or related field
- Experience in the pharmaceutical/life science industry is highly desirable.
- Solid hands-on expertise in analyzing immune response through immune cell functional and molecular phenotyping techniques with a special emphasis for multi-parameter flow cytometry.
- Demonstrated scientific productivity in linking molecular pathway analysis to adaptive and/or innate immune cell function.
- Solid translational knowledge of research models in the immunology space going from *in vitro* experiments to animal models and clinical studies.
- Ability to interface effectively with probabilistic modelling expertise to identify informative readouts for compound and/or disease profiling.
- Operational, communication and leadership skills commensurate to the highly matrixed project driven discovery environment.
- Excellent command of English, spoken and written.

There is a considerable degree of flexibility in terms of the levels at which the successful candidates may be appointed to these roles. This will be dependent upon the individuals' experience and seniority, and could range from Scientist, Senior Scientist, Principal Scientist up to Research Fellow.

These are excellent opportunities for ambitious scientists operating at the cutting edge in academia or industry to join one of the world's most successful healthcare companies and to develop their career within a dynamic, innovative, well resourced environment. Career

development opportunities for individuals who make a positive contribution in these roles will be excellent within Janssen globally, whether in Europe or the wider Janssen/J&J organization.

These roles are based at Janssen's state-of-the-art R&D facility at Beerse in the Flemish region of Belgium. This is a vigorous site, with a vibrant multi-national culture encompassing staff from various countries including the UK, USA, Belgium, Holland, Germany and France. English is the universal language for the site.

Beerse, the surrounding area and living in Belgium

Belgium is Europe in a nutshell -- multicultural and multilingual (French, Flemish and German as native languages; with a majority of younger people fluent in English) -- and is among the top-5 European countries in terms of relative spending power. Belgium is also ranked in the top-4 countries worldwide in terms of development level (according to a United Nations ranking based on life expectancy, educational program quality and income per person). With respect to medical care, the Belgian Social Security System offers excellent provisions both from a curative and preventive viewpoint, through the reimbursement of medication and hospitalisation costs. This almost unique component ensures that each individual in Belgium is entitled to the same high-quality medical and professional assistance.

Closest to Beerse is the city of Antwerp, Belgium's second largest city, primary seaport and largest town in Flanders (Flemish-speaking part of Belgium), a truly cosmopolitan city. Flanders in the north, a flatland intertwined with canals, is known for its great art cities: Antwerp, Bruges, Ghent and Brussels. There are excellent housing opportunities in the area , with a choice of living in the city, in a rural area or small town; and schooling facilities (both international and local) are also of a high standard. In other words, the quality of life enjoyed by people in this region is very high. And it is centrally located in Europe within close proximity to London, Paris and Amsterdam. Brussels, Belgium's capital city, about 45 minutes by road from Beerse, is one of the world's great cities, home to the European Union and NATO, as well as many international trade and finance companies. Belgium thus represents a fantastic central gateway in Europe to easily and rapidly explore and enjoy the surrounding countries and cultures.