

## New Paper from Optibrium and Tessella Illustrates Scientists' Instincts Are Often Impaired by Human Cognitive Biases When Making Drug Discovery Decisions

**CAMBRIDGE | OXFORD UK, July 08, 2010** – Optibrium, a provider of software solutions for drug discovery, and Tessella, the information technology and consulting services company and world leaders in digital preservation technology, today published a new paper highlighting that scientists' instincts may not always lead them to making good drug discovery decisions. The challenges of decision-making arise from the importance of multiple/conflicting criteria to the success of a potential drug molecule, the large amount of data generated and the inherent uncertainty in that data. The study illustrates how biased decisions in drug discovery can result in scientists missing good compounds by not searching widely enough and wasting resources by clinging to ideas that should be dismissed. The new paper: "Overcoming Psychological Barriers to Good Discovery Decisions" is published in Drug Discovery Today (2010) Volume 15, Numbers 13/14\_July 2010. A version may be downloaded free of charge from [www.optibrium.com/community/](http://www.optibrium.com/community/).

The paper identifies that while company rules, processes and systems seek to foster objectivity, common biases in decision making may hinder achievement of best possible performance. Psychological research proves again and again that people are bad at making complex decisions where there is risk involved. The paper demonstrates how better individual and team decision-making within drug discovery would enhance R&D performance. Feedback on problem solving performance could be one of the simplest measures to improve selection of compounds and effective screening sequences. The study also highlights that computational tools provide a more scientific approach that encourages objective consideration of all of the available information, helping scientists make decisions that are both balanced and rational, in the domains of library design, compound selection, screening, profiling and experimental design.

Drug discovery leaders receive much conflicting advice on possible ways to improve productivity and restore the rate of successful drug launches. Continuing technology investment, outsourcing of shared services and formation of smaller, disease-specific units, which bring researchers closer to clinicians are all current trends. However, senior management cannot afford to ignore the human dimension – are their teams making the best possible decisions given the information available to them, or that could be available given the right experiments?

Dr. Andrew Chadwick, Principal Consultant, Tessella, explains, "Past experience shows that many practical researchers remain baffled or confused by probabilistic models and so shy away from formal decision analysis. Yet reliance on gut instinct tends to lead to consistent patterns of mistakes. Discovery groups need to define and encourage 'best practice' to conduct projects in a way that captures wider company and industry experience. There is a need to make this as simple and accessible as possible via a more scientific approach."

Good decision-making is central to drug discovery success and the new paper demonstrates that the interactive software platform, StarDrop from Optibrium, can help drug discovery scientists to guide their scientific judgment to make decisions with greater success. Dr. Matthew Segall, CEO of Optibrium, explains, "StarDrop can help drug discovery scientists to guide their decisions while designing and prioritising molecules with the aim of achieving an optimal balance of properties. The probabilistic scoring approach, employed by the StarDrop software platform to guide compound selection decisions in drug discovery, indicates the likelihood of success of a compound against a set of property criteria, given the available property data for that compound and taking into account the underlying uncertainty in the data."

The intuitive software provides a decision-making framework, offering advantages over traditional predictive modelling platforms as it specifically helps users to identify chemistries with a high chance of success and focus expensive in-house resources. Used by pharmaceutical and biotech companies and research establishments globally, StarDrop guides compound selection and design decisions in all stages of drug discovery. The software provides a comprehensive range of features to support design and prioritization of high quality compounds including:



probabilistic scoring; chemical space and glowing molecule visualisation; ADME QSAR models; P450 metabolism models and automatic model building.

To learn more about how StarDrop can aid good decision-making in drug discovery please call Optibrium on +44 (0) 1223 815 900, email [info@optibrium.com](mailto:info@optibrium.com) or visit [www.optibrium.com](http://www.optibrium.com).

### **About Optibrium Ltd**

Optibrium ([www.optibrium.com](http://www.optibrium.com)) is dedicated to providing software to guide decisions involving complex, uncertain data in an intuitive way. Optibrium's primary product, StarDrop, is focused on the drug discovery industry, helping scientists to guide decisions in the design and selection of high quality drug candidates. Optibrium was founded in 2009 as a spin-out of one of Galapagos service divisions: BioFocus. The founding group was responsible for the development of StarDrop from 2003 and, prior to this, research and development of related technologies since 1994. Based in Cambridge, UK, Optibrium has a global customer base ranging from top-ten pharmaceutical companies to small biotechs and academic groups.

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### **About Tessella**

For decades, Tessella has been successfully delivering IT and consulting services to world leaders in R&D, science and engineering. We enable our clients in life sciences, energy, the public sector, and consumer industries to achieve a wide range of objectives, including, forecasting floods, developing fusion power, enhancing military sensor capability, improving drug discovery and development efficiency, and reducing risk to health and the environment in the extraction and production of oil and gas. With offices in Europe and North America, global companies rely on Tessella for business critical assignments.

Further information available at [www.tessella.com](http://www.tessella.com)

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