There is probably no such thing as a typical edition of Drug Discovery World, but in this number, as we enter the second decade of our existence, we include at least one novel contribution in the shape of a transcript of a roundtable discussion chaired by Robert Jordan, our editor-in-chief and publisher. The subject was a topical one – current and emerging trends in cell-based assays. The discussion makes interesting reading. There appears to have been general agreement among the participants that functional cell-based assays are likely to provide more biologically relevant data than the more traditional biochemical assays. There are still debates about what types of cells to use, whether whole cells or membranes should be employed, whether the functionality being measured truly mimics the disease situation being targeted, etc. In some circumstances a case can still be made for a combination of both biochemical and cell-based assays. However, there seemed to be no serious disagreement with the statement made by one of the participants that “the cell-based assay has probably emerged up-front now.”

Another unusual for us, but very interesting, article discusses the growing importance of Singapore as a centre for pharmaceutical and biotech companies to base their regional headquarters and R&D and manufacturing facilities. It is stated that there are now more than 16,000 people employed in more than 100 biomedical science companies and 30 research/medical institutes on the island. Singapore is increasingly seen as a ‘strategic beachhead site’ as companies move to gain an increasing presence in the vast and rapidly expanding Asian healthcare markets which were valued at US$240 billion in 2008 and expected to grow by some 5-10% in 2009. The fact that Singapore only entered this sector seriously in 2000 is a tribute to its agility and willingness to set up the appropriate infrastructures to allow this dramatic expansion.

The remainder of the articles in this edition of DDW are concerned with various technological innovations all, in one way or another, designed to meet the relentless requirement for new, useful and profitable medicines. One author states that a general response he receives when discussing the state of innovation in drug discovery technology is that it has declined significantly. Unfavourable comparisons are made with the consumer electronics industry with its more powerful computers, more sophisticated cell phones and the like. Our author concludes, however, that innovation is cyclical and that we may just be in a temporary trough, albeit a prolonged one. We must all hope that he is right!

The introduction of many new technologies over the past two decades or so is not without its problems. Even large pharmaceutical companies do not have the resources to invest in all these technologies and, in any event, it may not be the correct decision to do so. Authors from Wyeth Laboratories describe how that company has used portfolio and project management (PPM) tools together with scientific expertise to ensure transparency and alignment in applying technologies and to measure the return on investment in terms of improvements in quality of the drug discovery pipeline. The approach is exemplified in respect of a newly introduced technology, an in silico approach is exemplified in respect of a newly introduced technology, an in silico

Design of experiments (DOE) is a well-proven statistical method which has broad applications across many disciplines and industries. In another article our author suggests that it could, with advantage, be used in assay development which represents something of a bottleneck in many drug discovery laboratories. He points out that currently only one vendor offers specific software for investigating DOE in biological assays and he believes that a market opportunity exists for other systems which will allow the full potential impact of DOE on assay development to be realised.

Regulatory authorities have recently stepped up their requirements for quantitative data on the behaviour of potential new drugs and their metabolites in man. This requirement can be met by the use of carbon-14 labelled compounds. Very low levels of C-14 can be detected by the use of accelerator mass spectrometry (AMS) enabling low doses which pose no radiation risk to be administered to man. It is essential that no impurities are present in the labelled compounds – their presence could give rise to spurious results.

The consequence of this is that several custom labelling suppliers have invested in appropriate facilities to produce good quality C-14 labelled compounds. Some large companies have their own facilities but others are out-sourcing. Our article focuses on the new uses for C-14 compounds, discusses the factors which influence their preparation and indicates how suppliers are responding to the increasing demand for such compounds.

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