



## Protomold® parts assist medical breakthrough

Stokes Bio

In developing revolutionary new technology for the diagnosis of cancer, Stokes Bio Ltd called upon the services of rapid injection moulding company Protomold® to manufacture fully functioning prototypes in record time.

Based in Limerick, Ireland, Stokes Bio Ltd was created as a 'spin-out' business from the Stokes Research Institute at the University of Limerick just over a year ago. The company's technology is based upon the amplification of genes that over-express because of disease.

Part of the solution developed by Stokes Bio is the creation of microfluidic systems based on protected concepts in fluid-to-fluid control. A major component of such a system is the microfluidic card itself – a polycarbonate tray that houses 48 FEP polymer wells (and caps). Small quantities of fluid samples delivered by a pipette are mixed with reagents in each well. The resulting gene expression levels provide the Stokes Bio analysis equipment with the data required to identify specific types and sub-types of cancer, as well as target the required drugs and radiation therapy.

The advantages are quick, early and accurate diagnosis. It is also an extremely cost effective test as each well only requires as little as 30nl of fluid in comparison with the 5ml typically required by existing technology (hence reagent consumption costs are cut dramatically).

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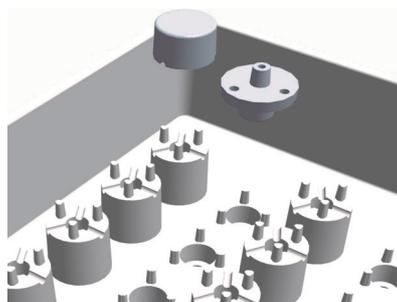
The business was formed with the aid of €1 million of Venture Capital Funding, and Stokes Bio realised the importance of pushing its idea to the next level and attract long term customers in the form of drug companies, health services and physicians.

“From day one we’ve had tremendous interest in our work,” explains director and co-founder Professor Mark Davies, “but we knew that having fully functioning prototypes as soon as possible would enhance our chances of success by many orders of magnitude. We are not the only company undertaking research in this field and we want our

system to be first to market.”

Following a personal recommendation of the services offered by Protomold from a fellow delegate at a conference, Prof Davies made initial contact with the Telford-based rapid injection moulding specialist. Stokes Bio Senior Engineer, Dr Kieran Curran, takes up the story.

“We supplied Protomold with a CAD file and the company’s ProtoQuote® system made recommendations about how the design could be improved to suit injection moulding,” he explains. “After further discussions we placed an order with Protomold to supply sets of prototypes components, with each set comprising the polycarbonate card/tray along with 48 FEP polymer wells and caps.”



The prototypes were delivered to Stokes Bio in

just 15 days: the agreed lead-time.

“Protomold hit all the tolerances and we assembled the parts with ease,” continues Dr Curran. “Overall our experience of using Protomold has been exceptionally positive and an additional benefit was that the company’s investors were able to see working prototypes.”

Stokes Bio expects to have its system involved in hospital trials working alongside existing technology, in 2007. Several sites in the US have been identified along with the Peterson Institute for Cancer Research in Manchester, UK.

“Protomold played a big part in helping us get to the stage we’re at today,” concludes Prof Davies. “They’ve done an excellent job for us and we would certainly invite them to be involved on future projects.”

In fact, Stokes Bio is already talking to Protomold about a new project: the provision of prototypes for hand-held thermocycling equipment, a low cost field device capable of testing for HIV.