



The LM20 Microfluidizer® offers effective cell disruption of a broad range of cell types for School of Biological and Chemical Sciences at Queen Mary University London.

We caught up with Dr Petra Ungerer, Biochemistry Department Lab Manager at the School of Biological and Chemical Sciences (SBCS), Queen Mary University London, (QMUL) to find out how the department uses Microfluidizer® technology for cell disruption.

We approached Analytik to find a replacement for a high-pressure homogeniser from another manufacturer, which had been unreliable and failed to achieve sufficient lysis of our tough yeast cells even after many passes. We selected the LM20 Microfluidizer® not only because it efficiently lysed a broad range of cell types but also was incredibly simple and easy to use which is very important as many different people need to use the machine regularly.

We also much appreciated the knowledgeable technical and applications support provided by Analytik which has enabled us to fully exploit the considerable capabilities of the LM20 Microfluidizer®.

Dr Petra Ungerer
Lab Manager, School of
Biological & Chemical Sciences
at QMUL

When and how did you first become aware of Microfluidizer® technology?

When our old cell disruptor broke down about a year ago, we started a search to see what was out there. We came across the system and after a demo, where we gave (Analytik) the toughest of our yeast samples to lyse, we were very impressed and decided to purchase the (LM20) Microfluidizer®.

What has the Microfluidizer® enabled you to achieve?

The biochemistry department is very diverse and many groups rely on the use of the Microfluidizer® for their research. We have a protein facility providing a service that purifies proteins from any system as requested by the end user. There are research groups working with bacteria, yeast, cyanobacteria, diatoms and mycobacteria, all of them using the Microfluidizer® to lyse the cells in preparation for their downstream experiments.

Efficient lysis of some stubborn yeast strains like *Yarrowia* is definitely something we were struggling with before acquiring the Microfluidizer®. Also it is great, for example, that *E. coli* and diatoms can be lysed by passing them only once, when previously several passes were required.

What industries do you believe your work could potentially benefit in the future?

SBCS is involved in fundamental research, therefore links to industry are not always well defined. However, a number of groups are involved in research characterising molecular mechanisms through the study of protein structure and function. Specifically, we have strategic areas focussing on photosynthesis and the molecular basis of disease. So potentially their findings may have impact on future development of drugs and crops.

How do you plan to use the Microfluidizer® in the future?

As far as I can see our main applications will always be preparing samples for structural biology or biochemical experiments. But who knows, (SBCS) is very dynamic and with new academics arriving additional applications may be desired; which we will try to facilitate.