

Case Study Aberystwyth University

Fully automated haematology for research in exercise immunology

Sports science research laboratories have increasing requirements for reliable and easy to use haematology analysers. As such, a compact system that provides same day results is the practical solution to expensive outsourcing.

This case study demonstrates how the ABX Pentra 60C+ has enabled the Department of Sport and Exercise Science at Aberystwyth University to reduce running costs and bring haematology sample analysis in-house. Validated and reproducible results are therefore provided for a variety of exercise and health studies.

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Dr Glen Davison,
Department of Sport
and Exercise Science,
Aberystwyth University

With the installation of an ABX Pentra 60C+ bench top haematology analyser from HORIBA Medical within the Department of Sport and Exercise Science at Aberystwyth University, researchers have gained considerable flexibility within their studies into exercise immunology. Having their own easy to use haematology analyser is now enabling them to fully explore many research parameters, without the commonly incurred delays associated with outsourcing sample analysis.

Although the Department moved into purpose built facilities five years ago, automated haematology requirements were not a necessity at that stage and a decision was made to outsource analysis of this nature, for research purposes. “This however was a costly and time consuming process which didn’t allow us great autonomy or flexibility,” explains Aberystwyth University lecturer and researcher, Dr Glen Davison.

“We did have a small machine for measuring haemoglobin, a micro-centrifuge and microscopes but these were predominantly used for teaching, however these are not ideal for in-depth and extensive research studies. What we really needed for our investigations, where the understanding of leucocyte functionality is fundamental, was to bring our sample analysis in-house with a fully automated haematology analyser.”

“After looking at several different systems, we decided upon the ABX Pentra 60C+. We were impressed by the scope of parameters available, including large immature cells and atypical lymphocyte counts, in addition to the 5-part leucocyte differential. In addition, we were also impressed by the system’s working range and precision, particularly its ability to provide accurate leucocyte



The highly compact ABX Pentra 60C+ analyser provides 5-part cytochemical differential for white blood cells ideal for research in exercise immunology

differentials, even with extremely low counts (right down to 0.2 to $0.3 \times 10^9 / L$)” explains Glen Davison.

The highly compact ABX Pentra 60C+ analyser provides 5-part cytochemical differential for white blood cells making it ideal for the Department’s research in exercise immunology. With the ability to manage low sample volumes (CBC: $30 \mu l$ - DIFF: $53 \mu l$), unnecessary sample re-runs and time wastage are prevented.

Another important factor in the decision making process was the fact that the overall running costs of the ABX Pentra 60C+ were lower than other analysers assessed. “The ABX Pentra 60C+ is very cost efficient despite our very low throughput of samples which is probably no more than 1000 in a year,” adds Glen Davison.

In a research environment, where an analyser may not be used every day, the Department of Sport and Exercise Science needed a compact and reliable system that was easy to calibrate. “Once calibrated, the ABX Pentra 60C+ is extremely stable.

We run quality controls before every use to check the parameters are in-line, and we have found excellent day-to-day stability with this analyser. This is a massive advantage” comments Glen Davison.

Looking to the future, as part of their research into immunoendocrine responses to exercise, the Aberystwyth University team are interested in testing other bodily fluids for leucocytes. With the ABX Pentra 60C+ now in situ, Glen Davison is enthusiastic that this is a real possibility, something that was not so easily achieved through outsourcing and manual processes.

By bringing sample analysis in-house, the researchers at Aberystwyth University are able to achieve same day results without delay, identify problematic samples early on, and expand research parameters through quicker turnaround of routine and specific tests, preventing wasted time and results for both researcher and study volunteers.

Analysis **Anywhere**

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