

## **P.10.- The Development of a Diagnostic Test for Scrapie Infection in Sheep: <sup>1</sup>H-NMR Spectroscopy and Trace Element Profiling**

*A. J. Charlton, S. Jones, J. Lewis, N. Langford, R. Macarthur, J. Dennis & P. A. Brereton*

Central Science Laboratory, Sand Hutton, York, YO41 1LZ, UK.

The metabolite profiles of blood plasma from scrapie infected (pre-clinical and post clinical) and control sheep were analysed by <sup>1</sup>H-Nuclear magnetic resonance spectroscopy (<sup>1</sup>H-NMR). The results indicate that comparison of the citrate, lactate and 3-D-hydroxybutyrate concentrations enabled successful discrimination between blood plasma samples from control, pre-clinical and post-clinical animals. Trace element analysis by inductively coupled plasma mass-spectroscopy (ICPMS) identified significant differences between the concentrations of strontium, calcium, copper, magnesium, phosphorous and zinc in the pre-clinical and post-clinical samples. Interestingly the concentrations of copper and manganese, which are elements normally associated with scrapie, did not differ significantly in the samples analysed.

### ***Keywords***

*Scrapie, NMR, ICPMS, Diagnostic test*