

**Optimizing conditions for labelling proteins with 2-(4-isothiocyanatobenzyl)-1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid**

Larissa Wäntig<sup>a</sup> and Norbert Jakubowski<sup>a</sup>

<sup>a</sup>ISAS – Institute for Analytical Science, P. O. Box 10 13 52, D-44013 Dortmund, Germany.  
E-mail: [waentig@isas.de](mailto:waentig@isas.de)

We are using laser ablation ICP-MS to detect hetero-elements in proteins and antibodies after separation by use of sodium dodecyl sulphate polyacrylamide gel electrophoresis and blotting onto a membrane (1).

In this study proteins which don't contain hetero-elements are labelled with different lanthanides using 2-(4-isothiocyanatobenzyl)-1,4,7,10-tetraazacyclododecane-1,4,7,10-tetraacetic acid as chelating compound and a linker as well. The reactive isothiocyanato group makes covalent attachments to surface and terminal amino-groups. The effect on the rate of protein conjugation by changing parameters like pH, temperature and time is investigated and results will be presented. The optimized labelling conditions will be applied for labelling of specific antibodies used for detection of cytochromes P 450, a group of iron containing proteins expressed during chemical stress of test animals.

References:

(1) I. Feldmann, C.U. Koehler, P.H. Roos, N. Jakubowski, *J. Anal. At. Spectrom.*, 21 (2006) 1006-1015.