

**Second Research Coordination Meeting of the Coordinated Research Project
“Development of Strategies for the Effective Monitoring of Veterinary Drug
Residues in Livestock and Livestock Products in Developing Countries”**

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Introduction

The second RCM under this CRP was held in Pretoria, South Africa, 3 – 7 November 2003. Eleven of the twelve research contract holders, three research agreement holders and one technical contract holder attended the RCM. The meeting was opened by Dr. Fred Potgeiter, Director of Onderstepoort Veterinary Institute. The three research agreement holders gave presentations on relevant aspects of veterinary drug residues analysis. The increasingly important role of bioassay techniques such as reporter gene assays for the direct screening of the effects of hormonal and other residues in animal cells and the future role of such assays to complement existing instrumental techniques was highlighted by Prof. Meyer (GFR). The technical contract holder and research contract holders reviewed the results of the research and method development performed under the first phase of the CRP. Considerable progress has been made in many aspects of the overall work plan.

Several commercial immunoassay methods have been critically evaluated. The main problems identified with these kits were the instability of reagents, notably the enzyme conjugates, resulting in poor performance, and the need for better sample preparation protocols applicable to a wider range of matrices. Work plans have been agreed with several laboratories to attempt to address these problems.

Good progress has been made in several laboratories working on the development of in-house ELISA methods for chloramphenicol residues. The laboratories involved have produced and characterized antisera in various species and these will be used with reagents produced by technical contract holders to elaborate assay protocols. Further investigation into aspects such as reagent stability, antibody maturation and assay development using various assay formats is planned.

A full set of reagents and protocols for their optimisation in a ¹²⁵I radioimmunoassay (RIA) for chloramphenicol have been developed by the technical contract holders and transferred to a research contract holder for further method development. However, this researcher was unable to attend the RCM and a full report on the progress made on this method has not yet been provided.

A confirmatory method for chloramphenicol by LC-MSMS has been developed and fully validated.

Work on the extension of the applicability of an existing RIA method for the beta-agonist, clenbuterol, to a range of beta-agonistic drugs is ongoing. Antibodies provided by a technical contract holder have been characterized and will be incorporated into the method. Further work on sample extraction/preparation for the multiresidue method is also planned.

Work on HPLC methods for metabolites of the the nitrofurans is also ongoing, with some very promising results produced to date. Elaboration of sample preparation protocols is the next priority for the two contract holders working in this area.

The agreement holder in Sweden will collaborate closely with the research contact holder in the Republic of Korea (and others) to commence the implementation of laboratory quality assurance procedures.

The technical officer wishes to express his gratitude to Ms. Azel Swemmer for her assistance in organizing the meeting.

Conclusions and recommendations

Progress in the first phase of this CRP has been satisfactory. Various technical problems have been identified during the first phase and work plans have been designed to attempt to overcome these problems.

It was recognized that sample preparation is a critical process in the analysis of trace amounts of residues of veterinary drugs in complex biological matrices. In many cases, the principles behind the extraction and clean up of drug residues are poorly understood. It was recommended that the Agency should provide funding for training on this vital aspect of residues analysis. The best format for the training was felt to be a one-week training course.

Interest has been shown in participation in the CRP as an agreement holder by a researcher in Latin America with expertise in proficiency testing schemes. It was agreed that this would be a very useful component of the CRP, since participation in proficiency testing is a requirement for accreditation under the ISO 17025 quality assurance standard and such schemes are currently not available to many participants.

It was agreed that the inclusion of another research contract holder in Latin America, who has proposed the provision of LC-MSMS confirmation of the results of the current HPLC method development for chloramphenicol residues, would be very beneficial to the CRP.

The results of the contract holder currently working on the ¹²⁵I RIA for chloramphenicol should be obtained as soon as possible and critically evaluated. It may be necessary to contract another laboratory to continue this work.

The third RCM should be held in early 2005. Three possible venues have been suggested and will be evaluated.