CSIR DIVISION OF FOOD SCIENCE AND TECHNOLOGY
Chemical and Microbial Products

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Report

on

The development of an Immunoassay for the Detection of Gizzerosine in Fish Meal

Developed For: **Protein Research Trust**

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Executive Summary

The development of an Immunoassay for the Detection of Gizzerosine in Fish Meal

1. Status of Research

N-acetylated gizzerosine was successfully synthesized in thirteen steps as described in Attachment 1. However, the gizzerosine BSA conjugates which were subsequently prepared failed to produce polyclonal antibodies in rabbits (cf Attachment 2). This was possibly due to insufficient binding of N-acetyl gizzerosine to the protein. The current HPLC method of analysis of the conjugate formation lacks sensitivity and insufficient evidence of conjugate formation using the method was available. As a result of the failure of the method to raise polyclonal antibodies, the next phase to raise monoclonal antibodies was not further investigated.

2. Financial Status

To date, the allocated budget for Phase I and II has been utilized. R34 000 of the R92 800 allocated to Phase III (monoclonal antibody) was also utilized as part of the Phase II investigation.

3. Recommendations

The lack of sensitivity experienced with the analysis of the gizzerosine conjugation to the protein requires the introduction of a radioactive isotope to the gizzerosine molecule. This would increase the sensitivity of the analytical method and allow an easier measurement of the number of gizzerosine molecules bound to the protein.

Specific recommendations on an alternative approach to generating antibodies to gizzerosine are described on p22 of Attachment 2.