

PROJECT REVIEW

“Characterisation by Surface Plasmon Resonance of Monoclonal Antibodies that address Growth Hormone Isoforms”

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The aim of this proposal is the characterisation of distinct antibodies that specifically recognise growth hormone isoforms. Some of them are to be employed in an ELISA-based test to detect growth hormone abuse by athletes. In addition, other antibodies with different specificities and different origin will be studied.

For the characterisation of the antibodies the technique of surface plasmon resonance will be employed. In a straight-forward strategy the antibodies will be immobilised onto the carboxymethylated surface through standard amide-bond ligation chemistry. Different chips (each one with four channels, including controls) will be required to respond to different aspects of the characterisation. Available GH isoforms structurally related to the pituitary GH-N form will be flown across for the determination of specificity, cross-reactivity and to determine kinetic parameters. Also the effect of other growth-hormone related substances, both structurally and functionally, may be included in the study.

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Results and Conclusions

A rigorous study on the binding characteristics of thirteen different monoclonal antibodies, that address growth hormone isoforms, has been successfully conducted.

In this study, antibodies were compared using the Surface Plasmon Resonance method and this comparison helped in the selection of hGH antibodies for the purpose of anti-doping testing.