

PROJECT REVIEW

“Insulins and doping: how long can we detect them in blood and urine?”

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Insulins are therapeutically used for the treatment of diabetes mellitus. There are rumors that insulins are used by athletes for anabolic properties. Consequently their use is prohibited by WADA. To control their abuse several sensitive methods for the detection of insulins in blood and urine have been described for doping control purposes. Generally, the applicability of these methods is illustrated with blood and urine samples from diabetic-patients. Indeed, blood and urine samples can be easily collected from diabetic patients without major ethical concern. Unfortunately, it can not be excluded that these samples are not representative for a healthy athlete population because of the diabetic status of the patients. Additionally, these spot-samples don't give information on detection times. In general, no administration studies, from which the results are readily applicable to doping-control, have been performed. Therefore the aim of this project is to administer a single dose of insulins to healthy volunteers and to investigate detection times in blood and urine.

Because administration of a high dose of insulins can result in a life threatening situation only a low dose will be administered (0.05IU/kg). Three short acting insulins Lispro, Aspart and Glulisine will be investigated. Blood and urine samples will be collected from 1 week before administration, until 3 days after administration. The result of this project will be useful for doping organizations to set testing windows and for doping laboratories to evaluate their detection methods.