

## **PROJECT REVIEW**

### ***"A Pilot study: steroid profiling in saliva, route of administration study and influence on salivary parameters"***

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Saliva is a well-established matrix in toxicology and clinic testing. However, for doping control purposes, it was shown that saliva analysis has very interesting pharmacokinetic properties after application of small doses of testosterone gel. Salivary testosterone concentrations exceeded normal values with a 100 fold and can provide good discriminating properties after low-dose application of testosterone. Currently, literature is short on salivary analysis for doping control purposes and data are absent on salivary concentrations and behavior of other androgen metabolites after intake of endogenous anabolic steroids. Consequently, this project aims to explore the possibility of steroid profiling in saliva and to relate its outcome with urinary analysis for future implementation in routine anti-doping screening. Consequently, a sensitive salivary steroid profiling method will be developed for the quantitative monitoring of testosterone and other androgen metabolites in the pg/ml-range.

In a second stage, population thresholds for the monitored salivary compounds will be established in a cohort of 400 men and 400 women. Intra-individual variance shall be evaluated by analyzing longitudinal data of 10 male and 10 female volunteers. Within-subject variance on long term shall be evaluated in a period of six month with 10 oral fluid samples per volunteer. Intra-day variance shall be evaluated by collecting three aliquots per day during one week.

Finally, it is planned to organize a series of administration studies with single doses of oral, gel and intra-muscular testosterone formulations and the intake of the prohormone dehydroepiandrosterone. The salivary steroid profile data will be compared with urinary steroid profiling data.