G52 Identification of Human Body Fluids: Comparison Between Two Commercial Kits for Detection of Semen

Simona Ricci, MD, Department of Legal Medicine, Viale Regina Elena 336, Rome, ITALY; Fabio Verginelli, Department of Oncology and Neuroscience University "G.d'Annunzio" and Center of Excellence on Aging (Ce.S.I.), D.d'Annunzio Foundation, Chieti, ITALY; Andrea Mele, MD, Department of Legal Medicine University "Sapienza" Viale Regina Elena 336, Rome, ITALY; and Manuela Rosini, and Carla Vec- chiotti, MD, PhD, Laboratory Genetic of the Department of Legal Medi- cine University "Sapienza", Viale Regina Elena 336 00161 Rome, ITALY*

The aim of our presentation is to show the results making a parallel study to detect human semen on old and recent traces with these two different commercial kits.

This presentation will impact the forensic science community by showing how it is possible to improve the knowledge about identification methods using new approach to detect traces.

The examination of living victims of sexual assaults is very important; the necessity to have markers to detect the presence of semen on clothes or body fluids could be helpful in forensic science. Semen is the most common form of body fluid evidence encountered in these cases; in screening or examining sexual assault evidence, semen or other body fluids can be present on a variety of surfaces including sample collection swabs, pieces of clothes, bed sheets, towel, flooring, condoms, and feminine products. The samples can also be stored for many years: testing for body fluid identification and DNA profiling should be able to reliably, and with high sensitivity detect semen from a variety of sources. In countries with sophisticated forensic science or laboratories, the pathologist will not be called upon to carry out actual techniques for detection of seminal fluids: he has to be a careful collector of samples and to be able to make an interpretation of the results, but sometimes even the pathologist has to be well informed and has to be able to make these tests by himself. The detection of semen depends upon many different methods as naked-eye and lens recognition; examination under ultraviolet light, enzyme reactions (acid phosphatase activity), immuno- logical methods, FISH method.

Particularly the immunological methods are recently used in many laboratories and they detect the presence of some antigens that normally can be found also in seminal fluid: for example PSA and Semenogelin.

PSA or prostate-specific antigen is a glycoprotein produced by the prostatic gland and it is found in seminal plasma, male urine, and blood, it could be present also in tissue or fluid of the female body but the concentra- tions are very low. A positive PSA test is a reliable indicator of semen regardless the presence of spermatozoa or elevated acid phosphatase level.

The other test detect a different protein that is present on semen, Semenogelin: it is the major component of human semen and together with fibronectin, gives rise to he gel-like coagulum of newly ejaculated semen.

Both of them are immunochromatographic assay tests that use mono- clonal antibodies specific for the antigen and they use a strip test that can be manipulate easily.

The aim of our presentation is to show the results we had in our Laboratory making a parallel study to detect human semen on old and recent traces with these two different commercial kits. This study has the purpose to test also the sensitivity of these new methods because of the importance they could have in forensic cases.

Identification, Human Semen, Immunological Kits

 ** Presenting Author*