

RAPID STAIN IDENTIFICATION (RSID) SPECIFICITY AND SENSITIVITY

K. Tsukada, M. Nojiri, Y. Kurasawa, K. Kasahara

Nagano Police H.Q., 3916 Nishijo, Matsushiro-machi, Nagano-shi, Nagano 381-1232, Japan

Various specimens are found at crime scenes, some of which may not have human origins. Even specimens originating from Homo sapiens tend to be mixtures involving blood and dirt, blood and sweat, saliva and sweat, semen and saliva, and so on, rather than homogeneous materials. Performing blood typing or/and DNA typing without checking whether the specimens are mixtures can easily lead to wrong results. This underscores the importance of testing before blood or DNA typing to confirm that the specimens do indeed originate from humans or are mixtures. Numerous kits of high specificity and sensitivity are provided as clinical chemistry reagents are available for detecting the presence of human blood. But detecting the presence of human saliva or semen requires immunoelectrophoresis, since no such kits are currently available. Immunoelectrophoresis requires the use of antibodies with high specificity and sensitivity, but obtaining of antibodies with high specificity and sensitivity to human saliva and semen is difficult. This demand led to the recent introduction of Rapid Stain Identification (RSID) kits (Independent Forensics, Hillside, IL, USA). Based on immunochromatographic technology, RSID is an easy-to-use kit for detecting human saliva and semen. In our study, we assessed the specificity and sensitivity of RSID-Saliva and RSID-Semen, comparing them to other immunological and serological methods to determine whether they do indeed offer advantages.