# A modified rapid enzyme immunoassay for the detection of rabies and rabies-related viruses

Perrin, P; Gontier, C; Lecocq, E; Bourhy, H.

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## Abstract:

This paper presents a modification of the previously described Rapid Rabies Enzyme Immuno-Diagnosis test (RREID) by using biotinylated antibodies, streptavidin conjugate and a mixture of monospecific polyclonal antibodies against several lyssaviruses. In the modified technique (RREID-lyssa), microplates were sensitized with a mixture of purified antibodies against ribonucleoprotein (RNP) from Pasteur virus (Lyssavirus serotype 1), European Bat Lyssavirus (EBL, unclassified) and Mokola virus (Lyssavirus serotype 3). Bound RNP was detected by the same antibodies labelled with biotin and peroxidase-strepavidin conjugate. These techniques were used for the detection of RNP of different Lyssavirus serotypes (rabies and rabies-related viruses). For lyssavirus specimens of serotype 1, the threshold of detection of RREID and RREID-lyssa were similar. However, a smaller amount of labelled antibodies was needed when biotinylated antibodies were used. For specimens infected by rabies-related strains (serotypes 2, 3, 4 and EBL), the threshold of detection of the RREID-lyssa was between two and 512 times lower than with the RREID. The sensitivity and the specificity of the RREID-lyssa for rabies virus (serotype 1) when tested on a small field trial (53 specimens) were found to be identical to the RREID. Consequently, RREID-lyssa can be a useful tool for diagnostic laboratories that receive specimens infected by rabies-related viruses.

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