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Free floating brain sections for immunofluorescence markers: A technical and scientific approach

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Free floating sections is regarded as a relatively new method that can be used for immune fluorescence staining for histological evaluation during efficacy studies on animal models. This method is clearly the best way to obtain optimal Ab penetration and even staining of thick sections which later can be used for a confocal microscopical analysis. The technical work pattern of the method starting with the tissue preparation and conservation, through brain accurate dissection, staining and tissue evaluation are all unique protocols for this methods performance. The technical aspects such as tissue fixation in Paraformaldehyde and other tissue preparation procedures, brain sectioning, staining protocols are critical for the success of the method. Multiple examples of case studies are presented of projects that had combined the method such as Parkinson, stroke, ALS and other animal CNS models studies in Patho-Logica laboratories. Here the relevance of the method is demonstrated. Furthermore neuro-degenerative and inflammatory markers are showed. Another important aspect is the morphometry for histological data quantification. Using the free-floating method an accurate quantification of the histological end points is possible. Finally, we will discuss the advantages of the current method will be compared to the classical immunohistochemistry methods.

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