TRENDS IN
Biomedical
Laboratory Sciences

Finefix® Fixation In Histopathological Samples With Macroscopic, Histochemistry And Immunohistochemistry Assessment: A Systematic Literature Review

João Filipe[1], Mariana Silva[1], Natacha Monteiro[1], Mário Maia Matos[1] & Amadeu Borges-Ferro[1]

1.Escola Superior De Tecnologia Da Saúde De Lisboa, Instituto Politécnico De Lisboa, Lisboa, Portugal.

Fixation aims to preserve biological tissues and their components against natural degradation providing them with the necessary robustness to withstand further processing. The most used fixative is 10% Neutral Buffered Formalin (NBF), which offers some advantages over other solutions. However, it is considered a mutagenic and carcinogenic agent by the International Agency for Research on Cancer (IARC). To reduce the associated risk, other alternatives have been investigated. The working solution with FineFix® has a concentration of 70% ethanol, and, according to the patent, its additives mitigate the disadvantages associated with alcoholic fixatives. This review aims to assess the existing information regarding the fixation quality of FineFix®, considering macroscopic, histochemical, and immunohistochemical findings, to determine whether Pathology laboratories can adopt it. Articles, between the years 1990 and 2023, were selected following the PRISMA Methodology, searching the Pubmed, Google Scholar and B-On databases using the MeSH terms: "FineFix", "FineFix" AND "Fixative" OR "Fixation", crossing over in English, Portuguese, and Spanish.

After analysing the initial 1339 articles with eligibility criteria and quality control, a final total of 6 articles, dated from 2009 to 2013, was obtained. Original research articles mentioning FineFix® as an alternative fixation agent in Pathology and evaluating at least one of the parameters assessed in the review were selected. Information was analysed and collected regarding the type of sample used, the fixation stage itself, results obtained for the studied methodologies, and strategies for analysing research results. Upon reviewing the results, it was concluded that FineFix® has the potential as an alternative fixative. However, additional studies considering the optimisation of routine protocols and techniques for this fixative are needed.

Keywords: Finefix®, Fixation, Macroscopy, Histochemistry, Immunohistochemistry