Study	Year	Link	Storage conditions	Storage length	Storage effect	Notes	Relevant text
Myers 1977	1977	https://pubmed.ncbi.	Storage of glutaraldehyde and osmium fixed nerves in 100% glycerol at 4° C	Up to 9 months	Intact electron microscopy and collagen content, and tissue is reported to be able to be "stored indefinitely" in this manner		"It is reassuring to know that glutaraldehyde fixation and osmication does not appreciably alter the apparent collagen content of nerve tissue. This means that biopsy specimens may be conveniently prepared for morphological investigation, stored indefinitely in glycerol, dissected and still be suitable for collagen analysis if required"
Watson 1986	1986	https://pubmed.ncbi.	30% ethylene glycol, 30% sucrose, 1% polyvinylpyrrolidone in 0.1M PBS	Up to 3 months	No adverse effects on tissue morphology or antigenicity of tissue	They also store tissue at -20° C, but the abstract text reports that storage at 4° C does not cause damage during this storage period.	"Use of an ethylene glycol based cryoprotectant solution has been found to be effective for the long-term storage of brain tissue either in block form or as freely floating sections prior to immunocytochemical processing. Storage of tissue in the solution at -20°C or 4°C for up to 3 months produced no adverse effects upon tissue morphology, nor was LHRH immunoreactivity diminished or accompanied by elevated non-specific staining"
Morán 1992	1992	https://pubmed.ncbi.	Blocks stored at 4° C in 0.1 M phosphate buffer plus 40% sucrose	2-3 months	No loss of histochemistry signal for up to 2 months, but it began to be lost after 3 months		"Blocks which were stored at 4°C in 0.1 M phosphate buffer plus 40% sucrose for 2 months did not show any appreciable loss in either AChE or BChE. During the 3rd month the BChE pattern started to fade."
Wakabayashi 1993	1993	https://pubmed.ncbi.	15% sucrose in 0.1M phosphate buffer at 4° C	More than 3 years	Acceptable ultrastructural preservation		"In the present study, we tested a number of variations of storage in sucrose solution of human tissues combined with trypsin digestion in a systematic fashion; prolonged storage for more than 1 month was found to produce acceptable ultrastructural preservation of the tissues. Moreover, good permeabilization of antiserum was maintained and longer storage in sucrose solution (for more than 3 years) was also feasible."
Romijn 1999a	1999	https://pubmed.ncbi.	Tissue in toto stored in 30% sucrose solution supplemented with 0.05% sodium azide (NaN3) at 4° C	6 months	Fairly good histology and good immunofluorescence of neuronal cell bodies and nerve endings		"Thionin-stained cryosections (25m thick) cut from hypothalami stored for 6 months in 30% sucrose at 4C still showed fairly good histology, which was slightly better than that of hypothalami stored for 3 months in 30% sucrose at 80C or hypothalami stored for 3 months in the glycerol/DMSO mixture at either 4C or 80C (not shown). In particular, the extra freezing step and subsequent thawing always introduced some freeze damage, however carefully this step was performed. Immunolabeling of cryosections derived from hypothalami stored in 30% sucrose at 4C for 6 months also showed (after autofluorescence had been blocked; see below) good immunofluorescence of neuronal cell bodies and nerve endings (boutons) for AVP, VIP, GRP, and GAD65 in the PVN, SON, and SCN (Figures 1B–1E)."
Romijn 1999b	1999	https://pubmed.ncbi.	Hypothalamus stored in 30% sucrose in PBS supplemented with 0.05% sodium azide (NaN) at 4° C	Up to 6.6 months	In all the subjects examined, nerve endings and non-terminal varicosities staining positively for AVP or VIP were abundantly visible		"Our analysis showed, furthermore, that in spite of a postmortem delay of some hours and a storage period ranging from one to several months in 30% sucrose at 4°C, nerve endings and non-terminal varicosities immunoreactive for AVP or VIP were still abundantly visible in all individuals."
Monteiro 2008	2008	https://core.ac.uk/re	Stored in Kaiserling fluid, which contains glycerol	Up to 55 years	Reports overall high quality of a brain stored in Kaiserling fluid for 55 years, however with loss of nuclear detail on histology, with good intact immunohistochemistry. Cholesterol is still present in one of the images		"A detailed study of three cases from 1953, 1954 and 1955 confirms that modern techniques (including immunohistochemistry) can be used in aged tissue to the point where they are useful diagnostically. This study shows that with careful adjustment to protocols it is possible to achieve remarkably high quality histological results in tissues that have been preserved for many years. It confirms that specimens in museums represent avaluable resource for teaching and research at an ultrastructural level." ... "Samples that underwent post-fixation in 10% formalin produced sections that revealed an adequate processing, no evidence of shattering, and were evenly stained" ... "However, the integrity of nuclear detail, chromatin and nucleoli in the older specimen (1953) is less distinct than more recently fixed samples (2007)" ... "This raised the idea that possibly the antigen is not only masked during fixation by formaldehyde. Although the specimens 5883 and 5202 were fixed for at least 55 and 54 years respectively, cryostat sections produced good level of immunostaining for neurofilament (Fig 5.2), this can be explained by either the fact that Kaiserling solution has no formaldehyde in its composition, and because museum specimens are firstly fixed in formaldehyde and then stored in a formaldehyde-free preservative solution, antigens epitopes are more easy to retrieve than those from archival specimens that have been fixed in formaldehyde for years, or because the formaldehyde fixation is not the major reason for masking antigens"
Burke 2009	2009	https://pubmed.ncbi.	Antigen preserve solution - 1% polyvinylpyrrolidone, 50% ethylene glycol in 0.1M PBS, pH 7.4	Up to 3 years	Successful immohistochemistry experiments		"Systematical sampling in this manner has been a standard practice in our laboratory for the past 3 years. We have had a great deal of success performing immunohistochemistry on material that has been stored in antigen preserve three years after it was sliced without deterioration of the signal (Figure 1)."
Hughes 2016	2016	https://pubmed.ncbi.	Buffered formalin solution containing 12% w/v sucrose	Mean of 46.2 days (range 21–54 days)	No effect on cytoarchitectural features or immunostaining		"Following dissection, brains were stored in individually labeled 100 ml plastic vials filled with a buffered formalin solution containing 12% w/v sucrose ("storage solution") [28–31]. The solution was topped off to minimize evaporative loss and to ensure that the brain would be wholly submerged. Infiltration of sucrose was confirmed when each brain lost buoyancy and sank to the bottom of the vial. Liquid levels in the vials were checked daily and replenished if low. Care was taken to avoid exposing the vials to excessive heat." ... "[W]e found that transcardial perfusion fixation and long-term brain storage, conducted in remote field conditions with no access to cold storage laboratory equipment, had no observable impact on cytoarchitectural features of lizard brain tissue when compared to lizard brain tissue processed under laboratory conditions. Second, field-perfused brain tissue subjected to prolonged post-fixation remained readily compatible with subsequent immunohistochemical detection of neural antigens, with immunostaining that was comparable to that of laboratory-perfused brain tissue"
Strnad 2022	2022	https://pubmed.ncbi.	30% sucrose in PBS with 0.1% sodium azide at 4° C	"Several months"	Reports that tissue can be stored for several months prior to mass spectrometry imaging		"Due to sodium azide, the samples can be stored in a fridge at 4 °C for several months."