

**NDMRB-RA-061**

**Risk Assessment:** Use of pressure cookers in conjunction with hot plates

**Scope**

Most formalin-fixed tissue requires an antigen retrieval step before immunohistochemical staining can proceed. This is due to the formation of methylene bridges during fixation, which cross-link proteins and therefore mask antigenic sites. Heat-induced epitope retrieval (HIER) is believed to reverse some cross-links and allows for restoration of secondary or tertiary structure of the epitope. The protocol must be optimized for each tissue, fixation method, and antigen to be studied. HIER is performed using microwave ovens, pressure cookers, vegetable steamers, autoclaves, or water baths.

Pressure cookers are preferred to microwaves and other methods because of uniformity of antigen retrieval. Domestic pressure cookers are permitted for use but must be included on the building list of pressurised vessels for insurance purposes.

Pressure cookers are heated vessel which contain buffer and steam under high pressure and at high temperature.

Pressure cookers are used in conjunction with hotplates, these hot plates must be PAT tested.

<b>Name of assessor:</b>	Julie Adam	<b>Date of Assessment:</b>	May 2017	<b>Review Date:</b>	Every three years
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**Risk Matrix:**

Risk Matrix		Likelihood			
		High	Medium	Low	Negligible
Consequence	Severe	High	High	Medium	Effectively Zero
	Moderate	High	Medium	Medium/low	Effectively Zero
	Insignificant	Medium/Low	Low	Low	Effectively Zero
	Negligible	Effectively Zero	Effectively Zero	Effectively Zero	Effectively Zero

**Risk Assessment:**

Hazard (Cause and consequence)	Affected Groups	Existing controls	Risk	Further Action
Risk of burns and scalds from hot surfaces and pressurised steam.	Staff/students/visitors	Full training MUST be given before use of this piece of equipment. Refer to manufacturer's instructions. Use of appropriate laboratory PPE.	Medium	Ensure that all users are fully trained
Equipment failure – end users could be exposed to steam and liquid under pressure	Staff/students/visitors	Users must check that the pressure cooker and hot plate are in good repair. There a seal in the lid of the pressure cooker and if this has perished then it must be replaced.	Medium	None
Expsoure to fellow lab users	Staff/students/visitors	Pressure cookers must not be left unattended during use and once the work is complete then clear signage must be displayed to indicate that the equipment may still be hot even if not in use.	Medium	None
Risk of fire	Staff/students/visitors	When using the hot plate and pressure cooker users must ensure that the bench is clear from clutter and flammables.  The area around and above must be clear while in use.	Medium	None

Signed By Author:

Approved by (sign and print):

Reviewed by:

Review date: