



General Risk Assessment

Form RA1

(Refer to Notes for Guidance before completing this form)

School Assessment No:	SuRF-RA1-IMM-008.01
Title of Activity:	Heat-induced Epitope Retrieval (HIER) Using a Pressure Cooker
Location(s) of Work:	Laboratories E1.24 / 1.25 of the Shared University Research Facilities (SuRF) within The Queens Medical Research Institute (QMRI), 47 Little France Crescent, Edinburgh, EH16 4TJ
Brief Description of Work: 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. Refer to Standard Operating Procedure: SuRF-HIS-008	

Assessment History:		
Number:	Date:	Reason for Change:
01	01/03/2016	Original

1.0 Hazard Identification:

Identify all the hazards; evaluate the risks (low / medium / high); describe all existing control measures and identify any further measures required. Specific hazards should be assessed on a separate risk assessment form and cross-referenced with this document. Specific assessments are available for hazardous substances, biological agents, display screen equipment, manual handling operations and fieldwork. See <http://www.ed.ac.uk/schools-departments/health-safety/risk-assessments-checklists/risk-assessments> for details.

Hazard(s)	Present Risk Evaluation L/M/H	Control Measures (i.e., alternative work methods / mechanical aids / engineering controls, etc.)	Risk Evaluation after control L/M/H
Handling human or animal tissue.	Medium	<ul style="list-style-type: none"> . No unfixed high-risk specimens to be handled in the laboratory. . All staff are strongly advised to have an up-to-date Hepatitis B vaccination. . Use of appropriate laboratory Personal Protective Equipment (PPE). . Training and supervision. 	Low
Handling chemicals or substances hazardous to health.	Low	<ul style="list-style-type: none"> . Refer to COSHH form: SuRF-COSHH-IMM-008 . Use of appropriate laboratory (PPE). . Training and supervision. 	Low
Risk of burns and scalds from hot surfaces and pressurised steam.	High	<ul style="list-style-type: none"> . Full training MUST be given before use of this piece of equipment. . Refer to manufacturer's instructions. . Use of appropriate laboratory PPE. 	Low

2.0 Engineering controls: Identify all relevant controls (*Tick relevant boxes*)

Guarding	<input type="checkbox"/>	Extraction (LEV)	<input checked="" type="checkbox"/>	Interlocks	<input type="checkbox"/>	Enclosure	<input type="checkbox"/>
Other relevant information (incl. testing frequency if appropriate):							

3.0 Personal protective equipment (PPE): Identify all necessary PPE (*Tick relevant boxes*)

Eye / Face	<input checked="" type="checkbox"/>	Hand /Arm	<input checked="" type="checkbox"/>	Feet / Legs	<input type="checkbox"/>	Respiratory	<input type="checkbox"/>
Body (clothing)	<input checked="" type="checkbox"/>	Hearing	<input type="checkbox"/>	Other (Specify)			
Specify the grade(s) of PPE to be worn: Laboratory coats. Non-latex disposable gloves. Safety spectacles or face shield. <i>Heat resistant gloves??</i>							
Specify when during the activity the item(s) of PPE must be worn: Lab coats and disposable non-latex gloves to be worn at all times. Eye protection to be worn when handling chemicals. Full face protection to be worn when handling anything corrosive.							

Non-disposable items of PPE must be inspected regularly and records retained for inspection.



4.0 Persons at risk: Identify all those who may be at risk (*Tick relevant boxes*)

Academic staff	Technical staff	X	P'Grad students	X	U'Grad students	
Maintenance staff	Office staff		Cleaning staff		Emergency personnel	
Contractors	Visitors	X	Others: Service Engineers	X		

5.0 Additional information:

Identify any additional information relevant to the activity, including supervision, training requirements, special emergency procedures, requirement for health surveillance etc.

Training and supervision MUST be given initially until the user is deemed competent to use the methodology unsupervised.

Users must be familiar with manufacturers instructions and follow all relevant safety requirements therein.

Staff members and P'Grad Students should make themselves familiar with Parts Two, Three, Four, Five and Six of the University Health and Safety Policy at:

<http://www.ed.ac.uk/schools-departments/health-safety/policy-cop/policy>

and the School's Health and Safety Manual at: <http://www.ed.ac.uk/schools-departments/medicine-vet-medicine/staff-students/staff/health-and-safety/manual>

6.0 Assessment carried out by:

Name:	Lyndsey Boswell	Date:	01/03/2016
Signature:		Review Date:	Annual