

**NDMRB-RA-005**

**Risk Assessment: TCR Chemical Refolding**

**Scope**

Inclusion bodies are diluted in c. 10ml guanidine solubilisation buffer plus fresh DTT, prior to dilution in 1L of cold refolding buffer with stirring in the cold room. Following overnight incubation, refold is dialysed against 5L of distilled water or 10mM Tris buffer (final buffer chance) with 3 changes of buffer over 48h. Refold is then subjected to IEX chromatography using Akta Start (see separate FPLC RA, VI-RA-020)

It is the users responsibility to ensure what controls are needed to ensure that the health of themselves and others around them. It is imperative that you **DO NOT** start any work until you are absolutely sure of the appropriate precautions that need to be employed. If you are unsure seek advice from your line/laboratory manager or your departmental safety officer (DSO).

<b>Name of assessor:</b>	L Garner	<b>Date of Assessment:</b>	Feb 2016	<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
<p><b>Chemical Hazards:</b></p> <p><b>EDTA:</b> H319 Causes serious eye irritation</p> <p><b>Cysteamine Hydrochloride:</b> H302 Harmful if swallowed</p> <p><b>Cystamine Dihydrochloride:</b> H302 Harmful if swallowed</p> <p><b>PMSF Solution:</b> H225 Highly flammable liquid and vapour H315 Causes skin irritation H319 Causes serious eye irritation</p> <p><b>Guanidine Hydrochloride:</b> H302 + H332 Harmful if swallowed or if inhaled H315 Causes skin irritation H319 Causes serious eye irritation</p> <p><b>Dithiothreitol:</b> H302 Harmful if swallowed H315 Causes skin irritation H319 Causes serious eye irritation H335 May cause respiratory irritation</p> <p><b>Trimethylamine N-oxide</b></p>	Staff, students and visitors	<p>Quantities/concentrations used are generally low and/or involve significant dilution. Potential respiratory irritants as listed are used at a dilution unlikely to cause a hazard.</p> <p>See COSHH overview (TCR Refolding) and specific COSHH assessments for each substance.</p> <p>Use of PPE (lab coats, safety glasses, nitrile gloves) as standard.</p>	Low	

H315 Causes skin irritation H319 Causes serious eye irritation H335 May cause respiratory irritation				
<b>Cold Room Hazards:</b>  Hypothermia  Electrical hazards	Staff, students and visitors	See TDI-RA-004 – use of cold rooms  Extended durations in the cold room are not required for this procedure  All electrical equipment to be kept dry and PAT tested as per above RA.	Low	PAT testing as scheduled.
<b>Dialysis:</b>  Large volumes of buffer in use	Staff, students and visitors	Buffer to be used and transported in a large, heavy-duty plastic bucket with a lid.	Low	

Signed By Author:

Approved by (sign and print):

Reviewed by:

Review date: