

NDMRB-RA-102

Risk Assessment: Peptide synthesis

Scope

Within the TDI there is a CEM liberty Blue peptide synthesiser. This instrument is to be used only by trained personnel and in compliance with this risk assessment. The risk is increased while lone working due to the chemicals that are used, users must not lone work with this instrument without prior arrangement. There are other risks within the room in which the peptide synthesiser is housed and these are also included within this risk assessment. When working with this instrument full PPE (Lab coat, safety glasses and gloves) must be worn at all times. Where identified all chemicals must be handled in a fume hood.

Replaces TDI-RA-040

Name of assessor:	Andrea Keepence-Keyte – Laboratory Manager	Date of Assessment:	June 2015	Review Date:	Every 3 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
Use of substances hazardous to health: Dichloromethane, Dimethylformamide, DIPEA and Piperidine	Staff working with the peptide synthesiser	All staff to read the COSHH and MSDS associated with these chemicals. PPE, including lab coat, safety glasses and gloves are to be worn at all times when handling. These chemicals should be handled in a fume hood at all times and stored according to the safety information.	Medium	Only trained persons to use these chemicals
Working with solvents under pressure	Staff working with the peptide synthesiser	The system operates in such a way that the deprotection and solvent containers are under high pressure! They must be vented correctly before adding new solutions/solvent	Medium	Only trained persons to operate this instrument
Potential exposure to strong base DIPEA via leakage and poor sealing of the system.	Staff working with the peptide synthesiser	Ensure that the system is sealed appropriately before starting a synthesis. All staff are to read all COSHH and MSDS associated with DIPEA	Medium	Only trained persons to use this chemicals
RISKS ASSOCIATED WITH THE ROOM WHERE THE SYNTHESISER IS HOUSED				
Compressed gas cylinders: risk of leakage, falling and explosion	All staff working within the secondary MS room	Compressed gas cylinders must be securely fastened whilst in use in the MS room. All users must become familiar with NDMRB-SOP-001 and NDMRB-RA-065 Safe movement and handling of Compressed gas cylinders. These documents outline the risks involved when working with compressed gas cylinders	Medium	Check that cylinders are secured adequately between changes. Ensure that staff have read and understood relevant SOP and RA

<p>Flammable liquids – fire and explosion</p> <p>Chemicals – exposure through spillage and use</p>	<p>All staff working within the secondary MS room</p>	<p>Ensure that all flammable liquids are stored in the appropriate manner.</p> <p>Ensure that all chemicals are labelled and stored correctly.</p> <p>Ensure that all mobile phases are clearly and correctly labelled with the chemicals and the concentrations.</p> <p>Ensure that all spills are cleared away promptly and correctly.</p> <p>This also includes waste products produced during the use of MS.</p> <p>All users must have read and understood: NDMRB-SOP-003 Handling, Storage and Disposal of Lab Waste NDMRB-SOP-004 Safe handling and use of Chemicals NDMRB-RA-066 Handling and Usage of Chemicals NDMRB-SOP-008 Storage of flammable liquids in containers</p>	<p>Medium</p>	<p>Ensure that staff have read and understood relevant SOP and RA</p>
<p>Fire</p>	<p>All staff working within the secondary MS room</p>	<p>No smoking is permitted anywhere within the TDI</p> <p>All electrical equipment is to be PAT tested</p> <p>All equipment will be serviced on a regular basis</p>	<p>Low</p>	<p>Ensure that all staff are aware of this procedure and that no equipment is used until it has been PAT tested.</p>
<p>Within the Secondary MS room there are a number of items which present slips, trips and falls hazards. These include: Spills/waste over flow Kick stools</p>	<p>All staff working within the secondary MS room</p>	<p>Any spills or waste over flows are to be cleared away immediately. Check waste collection vessels on a daily basis and change/empty where necessary.</p> <p>Try to keep stools and kick stools stored under benches where possible.</p>	<p>Medium</p>	<p>Ensure that the floor space within the room is kept as clear and tidy as possible – make all users of the room aware of this requirement.</p>

Stools Intermittent floor storage Waste collection containers for MS		Try to minimise the length of time that there is intermittent floor storage – make colleagues aware of the hazard. Try to keep waste collection vessels under the bench or as close to the instruments as possible.		
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Signed By Author:

Approved by (sign and print):

Reviewed by:

Review date: