COSHH Risk Assessment

Newcastle University OHSS: H&S Form 401.1a

This form should be completed electronically and signed by the Principal Investigator or responsible person. Guidance on completing this form is provided in the COSHH Risk Assessment section of the OHSS website.

Section 1: Project Details

1.1.	**Title of project or activity**	Media preparation and agar plate pouring		
1.2.	**Principal investigator/responsible person**	Peter Banks		
1.3.	**School/Institute/Service**	High Throughput Screening Facility		
1.4.	**Location of work** building and room numbers	Catherine Cookson Building M2026		
1.5.	**Brief description of work activity**	Media preparation and agar plate pouring including antibiotics and media constituents		
1.6.	**Date of assessment**	28/10/2015	**1.7. Revision date***	28/10/2017

Section 2: Emergency Quick Reference

The purpose of this section is to provide easy access to emergency information. A full assessment of risk will be provided in the next sections and **completing this section last is advisable.**

2.1. Emergency contacts One of these should be the PI/responsible person Security can be contacted on extension 6666	**Name:**	Peter Banks	Adrian Blackburn
	Position:	ESO	Senior Technician
	Telephone number:	07541238957	01912084963

2.2. Hazard pictograms – select all that apply to the work activity.

 *Health hazard*	 *Toxic*	 *Corrosive*	 *Harmful/ Irritant*	 *Flammable*	 *Oxidising*	 *Explosive*	 *Compressed gas*	 *Danger for the environment*
X	X	X	X					

2.3. Name of hazard	**2.4. Properties of hazard** Briefly describe how the chemical is hazardous e.g. toxic, flammable, carcinogen	**2.5. Emergency procedures** Include, as appropriate, procedures for: • Contained Spill • Small uncontained spill, • Large uncontained spill • First aid • Fire
Hygromycin Powder	toxic	• The maximum pack size is 5g, clean up with moist tissues and dispose of as hazardous waste. Wear gloves, type P1 (EN143) respirator filter, lab coat and safety glasses. Keep in suitable, closed containers for disposal. • **If in eyes** rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • **In case of skin contact** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. • **If inhaled** move person into fresh air. If not breathing, give artificial respiration.

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Hygromycin solution (300mg/ml)	toxic	• The maximum pack size is 1ml, clean up with moist tissues and dispose of as hazardous waste. Wear gloves, type P1 (EN143) respirator filter, lab coat and safety glasses. Keep in suitable, closed containers for disposal. • **If in eyes** rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • **In case of skin contact** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. • **If inhaled** move person into fresh air. If not breathing, give artificial respiration.
ClonNat Powder	irritant	• The maximum pack size is 5g, clean up with moist tissues and dispose of as hazardous waste. Wear gloves, type P1 (EN143) respirator filter, lab coat and safety glasses. Keep in suitable, closed containers for disposal. • **If in eyes** rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • **In case of skin contact** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. • **If inhaled** move person into fresh air. If not breathing, give artificial respiration.
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G418 Powder	irritant	• The maximum pack size is 5g, clean up with moist tissues and dispose of as hazardous waste. Wear gloves, type P1 (EN143) respirator filter, lab coat and safety glasses. Keep in suitable, closed containers for disposal. • **If in eyes** rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • **In case of skin contact** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. • **If inhaled** move person into fresh air. If not breathing, give artificial respiration.
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Methotrexate powder	toxic	• The maximum pack size is 1g, clean up with moist tissues and dispose of as hazardous waste. Wear gloves, type P1 (EN143) respirator filter, lab coat and safety glasses. Keep in suitable, closed containers for disposal. • **If in eyes** rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • **In case of skin contact** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. • **If inhaled** move person into fresh air. If not breathing, give artificial respiration.

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Methotrexate solution	irritant	• The maximum pack size is 1ml, clean up with moist tissues and dispose of as hazardous waste. Wear gloves, type P1 (EN143) respirator filter, lab coat and safety glasses. Keep in suitable, closed containers for disposal. • **If in eyes** rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • **In case of skin contact** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. • **If inhaled** move person into fresh air. If not breathing, give artificial respiration.
Canavanine powder	irritant	• The maximum pack size is 5g, clean up with moist tissues and dispose of as hazardous waste. Wear gloves, type P1 (EN143) respirator filter, lab coat and safety glasses. Keep in suitable, closed containers for disposal. • **If in eyes** rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • **In case of skin contact** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. • **If inhaled** move person into fresh air. If not breathing, give artificial respiration.
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Additional rows can be added to this table as required

Section 3: The Risk Assessment

Additional rows can be added to this table as required

3.1. Name of hazard including substances and by-products produced during or as a result of the activity.	**3.2. Properties of hazard** Provide details of how the substance could cause harm. Useful sources of information are the safety data sheet for the substance, Hazard (H) statements (give the whole phrase not just the code), and the workplace exposure limit.	**3.3. Physical form** e.g. powder, dust, granular, pellet, liquid, solution, gas.	**3.4. Quantity and concentration** (give units)	**3.5. Frequency of use** e.g. daily, weekly, monthly, one-off.	**3.6. Route of exposure** e.g. ingestion, inhalation, skin/eye contact, skin absorption, injection/sharps injury.
Hygromycin powder	H300 Fatal if swallowed H310 Fatal in contact with skin H330 Fatal if inhaled H318 Causes serious eye damage H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled	powder	5g	6 monthly	ingestion, inhalation, eye contact
Hygromycin powder	H300 Fatal if swallowed H310 Fatal in contact with skin H330 Fatal if inhaled H318 Causes serious eye damage H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled	powder	1ml at 300mg/ml	monthly	ingestion, inhalation, eye contact
ClonNat powder	H302 Harmful if swallowed H315 Causes skin irritation H319 Causes serious eye irritation H335 May cause respiratory irritation	powder	5g	6 monthly	ingestion, inhalation, eye contact
ClonNat solution 100mg/ml	H302 Harmful if swallowed H315 Causes skin irritation H319 Causes serious eye irritation H335 May cause respiratory irritation	solution	1ml at 100mg/ml	monthly	ingestion, inhalation, eye contact
G 418 powder	H317 May cause an allergic skin reaction H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled	powder	5g	monthly	ingestion, inhalation, eye contact
G 418 solution	H317 May cause an allergic skin reaction H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled	solution	1ml at 200mg/ml	monthly	ingestion, inhalation, eye contact
Methatrexate Powder	H301 Toxic if swallowed H315 Causes skin irritation H319 Causes serious eye irritation H340 May cause genetic defects H360 May damage fertility or the unborn child	powder	1g	anually	ingestion, inhalation, eye contact
Methatrexate solutution	H301 Toxic if swallowed H315 Causes skin irritation H319 Causes serious eye irritation H340 May cause genetic defects H360 May damage fertility or the unborn child	solution	1ml at 200mg/ml	annually	ingestion, inhalation, eye contact
L-Canavanine sulfate salt	H302 Harmful if swallowed H312 Harmful in contact with skin H332 Harmful if inhaled	powder	5g	6 monthly	ingestion, inhalation, eye contact

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L-Canavanine sulfate salt	H302 Harmful if swallowed H312 Harmful in contact with skin H332 Harmful if inhaled	solution	0.5ml at 100mg/ml	6 monthly	ingestion, inhalation, eye contact
3.7 Carcinogens All carcinogens and users of carcinogens should be notified to OHSS using the following link http://www.ncl.ac.uk/ohss/chemical/carcinogens.htm					

3.8. Dangerous Substances and Explosive Atmospheres (DSEAR)	**Yes**	**No**
Are you carrying out an activity/chemical reaction that is at risk of thermal runaway or explosion?		**x**
Will the activity involve handling or storage of pyrophoric or unstable substances such as peroxide?		x
Will flammable vapours, solid particles, fibrous particles etc. capable of forming an explosive atmosphere be present in the working atmosphere?		x
If the answer to any of the above questions is yes, you will need to complete a short 'add-on' DSEAR risk assessment		

3.9. Who might be at risk? (tick all that apply)	**Staff**	**Postgraduates**	**Undergraduates**	**New or expectant mothers** (Contact Occupational Health)	**Contractors**	**Public including visitors and children**
	x	X	X			

3.10. Assessment of inherent risk to human health prior to the use of controls (please use the risk assessment matrix at the end of this form)	**High**	**Medium**	**Medium/low**	**Low**
		x		

Section 4: Controls

Specify for <u>each hazard</u> identified in section 3. Precautionary (P) statements are a useful source of information.	
4.1. Physical or Engineering Controls. LEV, fume hood, glove box, total containment etc. **Specify at which point in the work activity they are to be used.**	A fume hood is advisable but not essential. Powder quantities are very small so large spills will not occur. Solution are aliquoted into Eppendorf tubes and frozen until required.
4.2. Administrative controls Training requirements, access control, signage.	All Staff carrying out this work activity will attend the chemical safety training course. In addition, postgraduates will receive on the job training in the procedure. They will be supervised until deemed competent in the activity by the principal investigator Stock solutions will only be made when needed and at a volume that should last some time – this will reduce frequency of exposure to concentrated/neat substances.
4.3 Personal Protective Equipment. Respirators, safety specs, face mask, lab coat, gloves etc. **Specify which type and when they are to be worn.**	A lab coat and nitrile gloves will be worn for all parts of the experiment. Nitrile gloves are compatible with all materials used. A type P1 (EN143) respirator filter will be worn for weighing out powders. Once in solution these substances are deemed to be at lower risk and a face mask will not be used for the rest of the procedure.
4.4. Storage requirements Include a description of how hazardous substances including flammable materials will be stored. Describe how incompatible materials will be segregated.	Agar Powder is stored in a sealed plastic container on the shelf in room M2090. Agar solution is autoclaved in Glass Duran bottles and is dispense on the day that the solution is made.
4.5. Transport of the hazardous substance Describe how you will transport substances between laboratories or different university sites.	Powders are stored on shelves in the original containers. Solutions will be stored in freezers in Eppendorf tubes.
4.6. Disposal procedures Carefully consider the safest means of disposal and identify when waste should be disposed of by a chemical waste contractor	All waste will be disposed of by contracted hazardous waste disposal.

	Yes	**No**	**Describe the findings of exposure monitoring or health surveillance**
4.7. Is exposure monitoring required? For example if you suspect that exposure to a chemical exceeds the workplace exposure limit. Contact OHSS for further advice		x	
4.8. Is health surveillance required? See Occupational Health surveillance policy and programme. Contact Occupational Health for further advice		x	

4.9. Assessment of residual risk to human health after the application of controls (please use the risk assessment matrix at the end of this form)	**High**	**Medium**	**Medium/low**	**Low**
				x

Section 5: Approval

I confirm that this is a suitable and sufficient risk assessment for the above described work activity	**Name**	**Signature**	**Date**
Assessor This is the person who has completed this form			
Principal Investigator/responsible person			

Risk estimation matrix Use this to complete sections 2.10 and 3.10

Severity of Harm	**Likelihood of harm**		
	High	**Medium**	**Low**
Severe	High	High	Medium
Moderate	High	Medium	Medium/low
Minor	Medium/low	Low	Low

Please keep a record of this risk assessment

***Review of assessment**

This assessment should be reviewed every 2 years and immediately if there is reason to believe that it is no longer valid (e.g. after an accident/incident), if there is a significant change in the work activity to which it relates or if the results of monitoring or health surveillance indicate it to be necessary.