Document Number: **SASoM/EQUIP/087.v2**

Title: **Use and maintenance of Herolab UVT-28M Transilluminator**

Version: **v2**

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Effective from:	06/03/2019
Valid to:	05/03/2024

SOP History		
Number	Date	Reason for Change
v1	06/03/2014	Original
V2	06/03/19	Update

1.0 Purpose –

The purpose of this SOP is to outline the principles of the routine use of the Herolab UVT-28M transilluminator in Laboratory 248 at the St Andrews School of Medicine (SASoM).

2.0 Scope –

This SOP applies to routine use and maintenance of the Herolab UVT-28M transilluminator within the SASoM.

3.0 Responsibilities –

It is the responsibility of all users of the Herolab UVT-28M transilluminator within the SASoM to comply with this SOP.

4.0 Procedure –

Ultraviolet (UV) transilluminators are commonly used to visualise fluorescent markers used in gel electrophoresis of nucleic acids and proteins, they consist of a UV light source and associated electronics housed in a box with appropriate optical filters. There should be a light transmitting cover with UV filter that transmits visible light to allow gels to be viewed. Exposure to UV commonly occurs when users visualise gels to cut and remove specific bands.

The Hazard

Transilluminators produce ultraviolet radiation (commonly between 302nm and 365nm) which can cause damage to human tissue in the eyes and skin.

High/Low ON/OFF

Risks from Transilluminator UV radiation

Trans-illuminators have the potential effects on eyes (photokeratitis, photoconjunctivitis and cataracts) and skin erythema (sunburn like condition) elastosis (photoaging and skin cancer). Hands, arms, face and eyes are likely sites of injury. Working unprotected for even a few minutes can cause injury. Some individuals have greater than usual photosensitivity. Effects of UV can occur within a short period (photokeratitis and erythema) or a long period after exposure (skin cancer). It is possible to calculate acute threshold for acute effects and therefore set exposure limits, however it is not possible to

do so for chronic effects, therefore there is no safe exposure level and exposure should be reduced as much as possible.

Guarding!!!
The UV transilluminator is **not** guarded (enclosed in an absorbent polymer) with an interlock that will make the device safe (i.e. turn it off) if the guard is opened.

The machine is turned ON/OFF using the red button on the front right.

Changing between the High and Low UV settings is achieved by using the High/Low button on the front of the machine.

When excising DNA fragments for cloning etc, the "Low" setting should be used to minimize damage to the DNA fragments.

Users must employ Personal Protective Equipment (PPE) when using this equipment.

Skin:
Laboratory coats and long sleeved clothing serve to protect the skin. Care should be taken to avoid gaps where skin is exposed.

Eyes:
Appropriate glasses and face visor should be worn if there is any risk of exposure.

If a spill occurs, use appropriate clean up procedures as required for radiation or biohazard control. The outer casing may be cleaned with water and tissue.

5.0 Personal protection –
Howie coat and gloves must be worn at all times.
Appropriate glasses and face visor should be worn if there is any risk of exposure.

6.0 Training –
All users have to be trained before using the Instrument by a designated person.

7.0 Related documents –

7.1 Risk Assessments: RA/GEN/005 (Non Ionising Radiation Sources / UV Transilluminators).

8.0 Approval and sign off –

Author:

Name: Paul Reynolds

Position: Principal Investigator

Signature: Date:

Management Approval:

Name: Peter Mullen

Position: Research Fellow

Signature: Date:

QA release by:

Name: Alex MacLellan

Position: QA Manager

Signature: Date:

STANDARD OPERATING PROCEDURE

Please sign below to indicate you have read this S.O.P and understand the procedures involved.

NAME	POSITION HELD	SIGNATURE	DATE