AUG 30, 2023

OPEN ACCESS

Protocol Citation: Martin O Pollard 2023. UV Exposure Protocol. **protocols.io** https://protocols.io/view/uv-exposure-protocol-cxbixike

Protocol status: In development
We are still developing and optimizing this protocol

Created: Jul 15, 2023

Last Modified: Aug 30, 2023

PROTOCOL integer ID: 85066

UV Exposure Protocol

Martin O Pollard[1]

[1]Wellcome Sanger Institute

Martin O Pollard
Wellcome Sanger Institute

ABSTRACT

A procedure utilising a UV crosslinker to expose isolated DNA to UV radiation with the aim of inducing lesions in the DNA typical of that kind of damage induced by UV.

MATERIALS

Human Genomic DNA - Human Mixed - G3041 1 × 100µg
UVP Crosslinker CX-2000
Dilution buffer
Gibson P20 pipette
Wide bore tips
Sterile petri dish
Eppendorf tube

SAFETY WARNINGS

Ultraviolet Crosslinkers are a powerful source of ultraviolet radiation. Even though they are not easily accessible, do not attempt to disengage or override the internal safety interlocks. Exposure to the UV radiation may result. If the UV sources remain on when the door is open, the unit is malfunctioning and use should be discontinued until the unit is serviced. Do not expose unprotected eyes or skin to UV radiation. Always disconnect the UV Crosslinker from its electrical supply before servicing.

UV treatment

1 Pipette 2.2 µL of Sample which has a measured concentration of [M] 227 µg/ml from stock tube to sterile plastic petri dish.

2 Dilute material in petri dish with 22.8 µL of buffer to achieve a target of 25 µL of DNA at [M] 20 ng/µl yielding 0.5 µg of DNA. Gently mix but do not agitate vigorously.

3 Expose tube to UV light using Crosslinker at 254 nm to exposing the cells to 800 J/m^2 (80000 µJ/cm^2)

Equipment

UVP Crosslinker CX-2000	NAME
UV Crosslinker	TYPE
UVP	BRAND
95-0339-02	SKU
https://www.uvp.com/products/lab-equipment/uvp-crosslinker/	LINK
254nm wavelength 8W	SPECIFICATIONS

3.1 Place sample in Crosslinker drawer

3.2 Press the ENERGY button, enter the exposure energy of 80000 microjoules/cm^2 as 80 on the keypad.
Note: YOUR ENERGY EXPOSURE SETTINGS DISPLAYED MUST BE MULTIPLIED BY 100 to obtain the exposure in microjoules/cm^2. If settings are correct, push ENTER on the touch pad.

3.3 Press START button to activate crosslinker and wait for cycle to finish.

4 Transfer sample to eppendorf tube.