Product specification

Sensitize pre-flash unit
RPN2051

Safety warnings and precautions
Warning: For research use only. Not recommended or intended for diagnosis of disease in humans or animals. Do not use internally or externally in humans or animals.
Sensitize is designed for autoradiography and fluorography use only. It must be used in accordance with the precautions and operating instructions stated in this leaflet. The batteries used with this product should not be disposed of in fire as they may leak a caustic solution or explode. Avoid flashing the unit directly into the eyes.
Batteries not included – requires four 1.5 volt alkaline batteries.

Sensitize
For maximum sensitivity and accurate quantitation of results when using fluorography or intensifying screens. Pre-exposure of X-ray film to an instantaneous flash or light greatly increases sensitivity and overcomes the non-linear response of film to low intensities of light(1). With Sensitize™ the darkening of the film is directly proportional to the amount of radioactivity in the sample. This effect is most striking for small amounts of radioactivity and when used with Amersham Biosciences ECL™ systems. The Sensitize flashgun and protocols have been developed for use with Hyperfilm™-MP and Hyperfilm ECL in conjunction with Hyperscreen™ or the fluorographic substrate Amplify™. For maximum performance the following protocols are recommended.

Calibration
To ensure reproducibility of results, Sensitize must be calibrated for individual darkroom conditions. The optimum positioning of the flashgun can be determined as follows.

Protocol
Calibrate the Sensitize unit in the position where it will be routinely used. This minimizes any variation in darkroom conditions which will affect the performance of the flashgun.
1. Cut a 2x5cm slot in the centre of a large piece of card or thick paper (recommended size 50x50cm).

Amersham Biosciences

2. On a clamp stand, measure and mark 2.5cm increments between 65cm and 90cm measured from the bench.
3. Switch the Sensitize unit on, and wait for the orange 'ready' light to show. The flashgun is now 80% charged – allow a further 5 seconds to ensure the unit is fully charged. If the 'ready' light takes longer than 20 seconds to show, new batteries should be fitted.
4. Prime the unit by firing three or four test flashes. This is achieved by pressing the red button on the base of the flashgun and allowing time to recharge between flashes. Care should be taken to avoid exposing light sensitive materials.
5. Clamp the Sensitize unit to the stand and position at the 65cm mark. The flash window should face downwards and be parallel to the bench.
6. Turn on the safelight and turn off the darkroom light.
7. Position a sheet of Hyperfilm (recommended size 18x24cm) beneath the opaque mask so that only an area towards the top left-hand corner of the Hyperfilm is revealed. The visible area of film must be directly below the flashgun window.
8. Mark the film to indicate the distance between the film and flashgun.
9. Fire the flashgun once.
10. Move the Hyperfilm, so that a fresh section is aligned with the mask window.
11. Move the Sensitize unit up one increment on the clampstand.
Remember – mark the film to indicate the new film-flashgun distance.
12. Fire the flashgun once.
13. Repeat steps 10 to 12 until exposure have been made at each of the eleven incremental steps up the clampstand.
14. Develop the film using standard procedures.

Quantifying results
The optimum film-flashgun distance is that which produces an increase in the absorbance of the developed film to between 0.1 and 0.2OD (A_{540}) above that of unexposed film.
1. Measure the OD at 540nm of an area of developed but unexposed film using a densitometer or by placing film sections in a spectrophotometer. This is the background reading.
2. Zero the machine.
3. Measure, in turn, the OD of each of the exposed areas of film.
4. Identify the film-flashgun distance required to give 0.15 absorbance units above that of the unexposed film. Use this distance for routine operation.

Pre-flashing with Sensitize

1. Switch the Sensitize unit on for the orange 'ready' light to show. The flashgun is now 80% charged – allow a further 5 seconds to ensure the unit is fully charged. If the 'ready' light takes longer than 20 seconds to show, new batteries should be fitted.
2. Move the Sensitize unit to its optimal position identified in the calibration section.
3. Prime the unit by firing three or four test flashes. This is achieved by pressing the red button on the base of the flashgun and allowing time to recharge between flashes. Care should be taken to avoid exposing light sensitive materials.
4. Under darkroom conditions, position a sheet of Hyperfilm on the bench immediately below the flashgun window.
5. Fire the flashgun once.
6. Use the film as normal with fluorography or intensifying screens.

Related products

Hyperfilm-MP

Size	Sheets	Code
18x24cm	25	RPN6K
18x24cm	75	RPN1675K
18x43cm	25	RPN36K
30x40cm	25	RPN7K
35x43cm	25	RPN8K
35x43cm	75	RPN30K
5x7 inches	25	RPN1676K
24x30cm	25	RPN2115K
8x10 inches	25	RPN1677K
8x10 inches	75	RPN1678K
20cmx25m	roll	RPN34K

Hyperfilm ECL

Size	Sheets	Code
18x24cm	25	RPN2103K
30x40cm	25	RPN2103K
5x7 inches	25	RPN1674K
10x12 inches	25	RPN1681K
8x10 inches	25	RPN2114K
18x24cm	75	RPN3103K
8x10 inches	75	RPN3114K

MP ready pack film

Size	Sheets	Code
18x24cm	50	RPN6L
35x43cm	50	RPN8L
8x10 inches	50	RPN1677L

Hypercassette™ and Hyperscreen

Size	Cassette (neutral colour)	Screens (pair)
18x24cm	RPN11642	RPN1662
24x30cm	RPN11643	RPN1663
30x40cm	RPN11644	RPN1664
35x43cm	RPN11645	RPN1665
18x43cm	RPN11646	RPN1666
20x40cm	RPN11647	RPN1667
5x7 inches	RPN11648	RPN1668
8x10 inches	RPN11649	RPN1669
10x12 inches	RPN11650	RPN1670

Hypertorch™

Pack/3 torches	RPN1620

Amplify

1 litre	NAMP100

For a complete listing of related products, please refer to the Amersham Biosciences catalogue.

For full details of our range of Hyperfilm-βmax, Hyperfilm^{3}H and other autoradiography products please contact your local Amersham Biosciences representative.

References

1. LASKEY, R.A. and MILLS, A.D. *Eur.J.Biochem.*, **56**, pp.335-341, 1975.

http://www.amershambiosciences.com
Amersham Biosciences UK Limited Amersham Place
Little Chalfont Buckinghamshire England HP7 9NA
Amersham Biosciences AB SE-751 84 Uppsala Sweden
Amersham Biosciences Inc 800 Centennial Avenue PO Box 1327 Piscataway NJ 08855 USA
Amersham Biosciences Europe GmbH Munzinger Strasse 9 D-79111 Freiburg Germany

RPN2051PS/AA