



Genetic Tools and Reagents

Gene Detection Systems, Non-Radioactive Detection, GeneProber™
Chemiluminescent detection, PCRProber™
Hybridization and Detection Reagents

Lumisol™ I Hybridization Solution

Catalog No.: 40-5022-20

200 ml

Store at Room Temperature



Caution: Product to be used by experienced researchers properly trained in performing molecular biology techniques following established institutional safety procedures. Gene Link recommends users to be qualified and certified for research using hazardous materials.



Caution: Lumisol™ I contains ~50% formamide. Formamide is teratogenic. The vapor is irritating to the eyes, skin, mucous membranes, and upper respiratory tract. It may be harmful by inhalation, ingestion, or skin absorption. Wear appropriate gloves and safety glasses. Always use in a chemical fume hood when working with concentrated solutions of formamide. Keep working solutions covered as much as possible.

Important information

Gene Link strongly recommends the use of non-radioactive gene detection systems including non-toxic hybridization solutions. Consider switching to Gene Link's non-radioactive detection systems. Visit www.genelink.com for complete listing of safe and reliable alternate hybridization products.

Product Description

Lumisol™ I is a ready-to-use conventional hybridization solution based on the classic formulation containing 50% formamide. It is toxic and a proper safe handling procedure is required for use and disposal. Wear appropriate gloves and safety glasses. Always use in a chemical fume hood when working with concentrated solutions of formamide.

Applications

Lumisol™ I hybridization solution can be used for all stringent types of nucleic acid blot hybridization conditions, particularly using radioactive labeled probes. Lumisol™ I hybridization solution can be used for prehybridization and hybridization. The hybridization temperature should be calculated for proper results. Duration of hybridization can be reduced to 6 hours and overnight hybridization can be used for high sensitivity requirements and for convenience.

Hybridization Temperature

Hybridization temperature is an essential criterion for obtaining reliable hybridization results and should preferably be calculated. A rule of the thumb hybridization temperature of 50°C is satisfactory for perfectly homologous probes greater than 100 bp; probes of this and larger fragment length are usually achieved by random prime labeling method.

The appropriate hybridization temperature is calculated according to GC content according to the following equation:

$$T_m = 49.82 + 0.41 (\% G + C) - (600/l)$$

[l = length of hybrid in base pairs]

$$T_{opt.} = T_m - (20 \text{ to } 25^\circ\text{C})$$

(The given numbers of the equation are according to a standard equation for hybridization solutions containing 50% formamide.)

T_{opt.} can be regarded as a stringent hybridization temperature allowing up to 18 % mismatches between probe and target. When the degree of homology of the probe to template is less than 80%, the T_{opt.} should be lowered; approximately 1.4°C below T_m per 1 % mismatch. Likewise the stringent washing steps should be adjusted accordingly by increasing the SSC concentration and/or lowering the washing temperature.

Example For hybridization of human genomic DNA with a 100% homologous probe use 50°C to 55°C, depending on the GC content of the probe.

Ordering Information

Hybridization Solutions

Product	Catalog No.	Size*	Price \$
Lumisol™ I Hybridization Solution; contains formamide	40-5022-20	200 ml	85.00
Lumisol™ II Hybridization Solution; for non-toxic hybridizations	40-5023-20	200 ml	85.00
Lumisol™ III Hybridization Solution; for oligo probes	40-5024-20	200 ml	85.00

Related Products Ordering Information

Genetic Tools and Reagents

Product	Catalog No.	Size	Price \$
Hybwash A, Hybridization Wash Solution	40-5020-20	200 ml	65.00
Hybwash B, Hybridization Wash Solution	40-5021-10	100 ml	50.00
Buffer M (Maleic Acid) 10X	40-5025-20	200 ml	125.00
Blocking solution 10X	40-5026-10	100 ml	75.00
Seq. Loading buffer	40-5027-00	1 ml	10.00
Alkaline Phosphatase Detection buffer 10X	40-5031-10	100 ml	65.00

Omni-Marker™

Product	Catalog No.	Size*	Price \$
Omni-Marker™ Universal unlabeled	40-3005-01	100 µl	15.00
Omni-Marker™ Universal unlabeled	40-3005-05	500 µl	50.00
Omni-Marker™ Universal unlabeled	40-3005-10	1 ml	90.00
Omni-Marker™ Low unlabeled	40-3006-01	100 µl	15.00
Omni-Marker™ Low unlabeled	40-3006-05	500 µl	50.00
Omni-Marker™ Low unlabeled	40-3006-10	1 ml	90.00
Omni-Marker™ GScan-2 Tamra labeled 50 bp - 600 bp	40-3062-01	100 µl	75.00
Omni-Marker™ GScan-2 Tamra labeled 50 bp - 600 bp	40-3062-05	500 µl	325.00

Loading Buffers

Product	Catalog No.	Size	Price \$
Loading Buffer 5X BPB/XC non-denaturing	40-3002-01	100 µl	5.00
Loading Buffer 5X BPB/XC non-denaturing	40-3002-10	1 ml	10.00
Loading Buffer 5X Orange G/XC non-denaturing	40-3004-01	100 µl	5.00
Loading Buffer 5X Orange G/XC non-denaturing	40-3004-10	1 ml	10.00
Loading Buffer 2X BPB/XC Denaturing for Sequencing	40-5027-01	100 µl	5.00
Loading Buffer 2X BPB/XC Denaturing for Sequencing	40-5027-10	1 ml	10.00

Prices subject to change without notice.

All Gene Link products are for research use only.