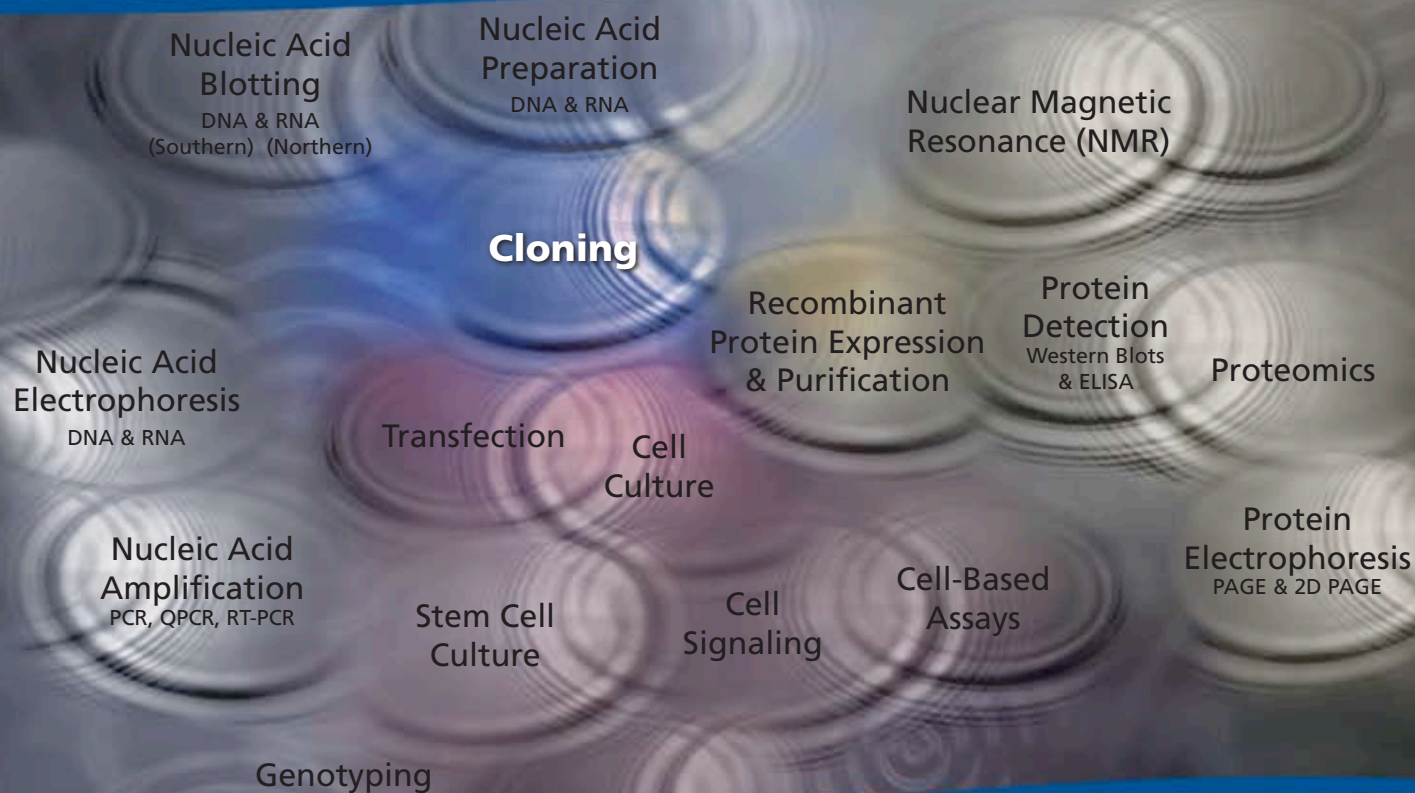


Life Science Reagents for Cloning from Sigma-Aldrich®



We Ripple Through Everything You Do!

- Extensive reagent offering to support your Cloning based research needs.
- Full line of media and specialty media
- Quality and availability assured
- Market leading Technical Service
- Leading Web support tools:

Cloning and Expression — sigma-aldrich.com/cloning

Competent Cells — sigma-aldrich.com/competentcells

Virtual Stockroom — sigma-aldrich.com/virtualstockroom

Life Science Reagents for Cloning from Sigma-Aldrich®

Ready-made versions of the most commonly used microbial media

• S-Gal®

- Safe, fast, easy method to differentiate between *lac+* and *lac-* colonies
- Superior to X-gal for clonal selection
- Color determination of black S-Gal colonies begins in as little as 14 hours with sharper contrast for easier colony determination
- Temperature stable, can be autoclaved or microwaved
- Safe, water-soluble reagent

• Pre-poured agar plates

- Sigma-Aldrich carries the following pre-poured plates:
 - LB
 - LB Ampicillin
 - LB Kanamycin
 - LB Carbenicillin
- Tested with at least four different strains of *E. coli* to demonstrate efficacy of antibiotics.

• Culture media

- Full line of dehydrated media, broth and agar
- Full line of fluorescent and Chromogenic media

To view our full line cloning products, please visit sigma-aldrich.com/cloning.

Cat. No.	Description
Acids & Bases	
H1758	Hydrochloric acid Molecular Biology Grade, 36.5-38.0 %
P5811	Phosphoric acid insect cell culture tested, 85%
P5958	Potassium hydroxide SigmaUltra, ≥85% as KOH
S2770	Sodium hydroxide solution 1.0 N, cell culture tested
Agarose	
A9539	Agarose for molecular biology
A4718	Agarose High resolution, DNase, RNase, NICKase, none detected
A5093	Agarose Low EEO, for molecular biology
A6013	Agarose Type I, Low EEO
A0169	AGAROSE TYPE I-A LOW EEO
A6877	Agarose Type II, Medium EEO
A7431	Agarose Wide range/Standard 3:1, DNase, RNase, NICKase, none detected
Antibiotics	
A0166	Ampicillin sodium salt cell culture tested, 91.0-100.5
C1863	Chloramphenicol Biotechnology Performance Certified
K1377	Kanamycin sulfate from Streptomyces kanamyceticus cell culture tested
S9137	Streptomycin sulfate salt cell culture tested, ≥98%
T7660	Tetracycline hydrochloride powder, cell culture tested
Broth / Media	
A5306	Bacteriological agar for molecular biology
T2559	EZMix™ Tryptone Pancreatic digest of casein
L5667	LB Agar Ampicillin-100, Plates
L7533	LB Agar EZMix Powder
L0543	LB Agar Kanamycin-50, Plates
L5542	LB Agar Plates
L2897	LB Agar powder
L7658	LB Broth EZMix Powder
L3022	LB Broth powder
L7275	LB Broth tablet
L3147	Luria Agar
L3522	Luria Broth
C4478	S-Gal/LB Agar Blend
S1797	SOC Medium
T9179	Terrific Broth, Modified EZMix Powder
Y1625	Yeast Extract powder
Y2627	2X YT Microbial Medium EZMix Powder
S9811	S-Gal powder
S9938	S-Gal/LB Agar Blend, without IPTG
S1813	S-Gal/LB Agar/Kanamycin Blend powder
S7313	S-Ga sodium salt powder

Cat. No.	Description
Buffers	
A1542	Ammonium acetate for molecular biology, ~98%
B4679	BIS-TRIS propane Biotechnology Performance Certified, cell culture tested, ≥99.0%
H4034	HEPES Biotechnology Performance Certified, ≥99.5% (titration), cell culture tested
H3537	HEPES solution 1 M, Cell Culture tested, Biotechnology Performance Certified
H3784	HEPES sodium salt Biotechnology Performance Certified, cell culture tested, ≥99.5%
P1190	Potassium acetate for molecular biology, ≥99%
P9541	Potassium chloride for molecular biology, ≥99%
S2889	Sodium acetate anhydrous for molecular biology
S3014	Sodium chloride for molecular biology, ≥98%
C8532	Sodium citrate tribasic dihydrate Molecular Biology, ~99% capillary GC
S3264	Sodium phosphate dibasic for molecular biology, ≥98.5%
T9285	Tris-EDTA buffer solution 100 ×, for molecular biology
T6066	Trizma® base Biotechnology Performance Certified, meets EP, USP testing specifications, cell culture tested, ≥99.9%
Competent Cells	
J3895	JM109 Competent Cells, Uni-pack
G3169	GC5™ Competent Cells Uni-pack
G2919	GC10™ Competent Cells Uni-pack
B2685	BL21 Competent Cells, Uni-pack T1 ^R
Enzymes	
R0260	BamH I from <i>Bacillus amyloliquefaciens</i> H buffered aqueous glycerol solution
D2886	DNA Ligase from T4-infected <i>Escherichia coli</i> buffered aqueous glycerol solution
R6265	EcoR I from <i>Escherichia coli</i> B55 buffered aqueous glycerol solution
R1137	Hind III from <i>Haemophilus influenzae</i> buffered aqueous glycerol solution
R8506	Not I from <i>Nocardia otidiscaviarum</i> buffered aqueous glycerol solution
P2308	Proteinase K from <i>Tritirachium album</i> BioUltra, for molecular biology, ≥30 units/mg protein, lyophilized powder
R7023	Pst I from <i>Providencia stuartii</i> buffered aqueous glycerol solution
R6513	Ribonuclease A from bovine pancreas for molecular biology, ≥70 Kunitz units/mg protein, lyophilized powder
R0754	Sal I from <i>Streptomyces albus</i> G buffered aqueous glycerol solution
T4427	Terminal Transferase from calf thymus buffered aqueous glycerol solution
R6379	Xho I from <i>Xanthomonas holcicola</i> buffered aqueous glycerol solution

Cat. No.	Description
General Reagents	
B4252	X-gal
A3059	Albumin from bovine serum Further purified Fraction V, ~99% (agarose gel electrophoresis), lyophilized powder, Essentially γ -globulin free
APF	Alkaline Phosphatase Detection Kit, Fluorescence
B3928	Blue-White Select™ Screening Reagent
C3032	Cesium chloride for molecular biology, ≥99%
C2432	Chloroform ≥99%, contains amylenes as stabilizer
G5400	D-(+)-Glucose for culture media, ≥99%
D0632	DL-Dithiothreitol ≥98% (TLC), ≥99% (titration)
D9779	DL-Dithiothreitol for molecular biology, ≥98% (TLC), ≥99% (titration)
S6021	D-Sorbitol for molecular biology, ≥98%
E5134	EDTA disodium salt dihydrate for molecular biology, ≥99%
E7023	Ethanol 200 proof (absolute), for molecular biology
E1510	Ethidium bromide solution 10 mg/mL, for molecular biology, aqueous solution
G7663	Gelatin blocking buffer for molecular biology, powder blend
G5516	Glycerol for molecular biology, ≥99%
I5502	IPTG ≥99%
M2545	Magnesium acetate tetrahydrate SigmaUltra, ≥98 %
M1028	Magnesium chloride solution for molecular biology, 1.00 M±0.01 M
M3409	Magnesium sulfate solution for molecular biology
C4523	N-Z-Case® TT Moderately digested casein enzymatic hydrolysate, from bovine milk
D9893	pBR322 Plasmid DNA from <i>Escherichia coli</i> RRI lyophilized powder
P5905	Peptone powder, from meat, cell culture tested
P1037	Phenol for molecular biology
P2069	Phenol:Chloroform:Isoamyl Alcohol 25:24:1 Saturated with 10 mM Tris, pH 8.0, 1 mM EDTA. for molecular biology
P5413	Poly(ethylene glycol) for molecular biology, average mol wt. 8,000
82514	Protein Hydrolysate Amicase® BioChemika, for microbiology
L4390	Sodium dodecyl sulfate for molecular biology, ≥98.5%
T7293	Tryptone Microbiologically tested
W4502	Water Molecular Biology Reagent
Y1625	Yeast Extract, powder
YEAST1	Yeast Transformation Kit
Z0173	Zinc chloride for molecular biology, ≥97.0%

Competent Cells from Sigma-Aldrich®

High Efficiency Chemically Competent and Electrocompetent Cells

GC5

- Comparable to DH5a
- Highest efficiency for chemically competent cells
- Suitable for larger plasmids
- New 96-well format for high-throughput cloning

GC10 and Thunderbolt

- Comparable to DH10B
- Suitable for methylated DNA and larger plasmids
- Recommended for cDNA and genomic library construction

Cat. No.	Description	Package Size
G3169	GC5 Competent Cells, Uni-Pack	10 x 50 µl 20 x 50 µl
G3044	GC5 Competent Cells, Standard Aliquots	5 x 200 µl 200 µl
G7419	GC5 Competent Cells, 96-well	1 ea. 4 ea.
G2919	GC10 Competent Cells, Uni-Pack	10 x 50 µl 20 x 50 µl
G2794	GC10 Competent Cells, Standard Aliquots	5 x 200 µl
T7699	Thunderbolt GC10	5 x 80 µl 5 x 100 µl

tonA – GC5 and GC10 Strains are T1 and T5 bacteriophage resistant!

JM109 and HB101

- High efficiency classic strains for routine cloning
- Cloning of genomic DNA with HB101
- Blue/white screening and IPTG induction with JM109
- Single-strand DNA propagation with JM109

Cat. No.	Description	Package Size
J3895	JM109 Competent Cells, Uni-Pack	10 x 50 µl

BL21

- High-level protein expression
- Increased stability of recombinant protein
- DE3 strains for expression with T7 promoter systems
- Tighter control of protein expression with pLysS and pLysE strains

Cat. No.	Description	Package Size
B2685	BL21–T1R Competent Cells, Uni-Pack	10 x 50 µl
B2935	BL21 (DE3)–T1R Competent Cells, Uni-Pack	10 x 50 µl
B3310	BL21 (DE3) pLysS–T1R Competent Cells, Uni-Pack	10 x 50 µl
B3435	BL21 (DE3) pLysE–T1R Competent Cells, Uni-Pack	10 x 50 µl

tonA – All BL21 strains are T1 and T5 bacteriophage resistant!

Competent Cell Strain Selection Table

FEATURE	GC5	GC10	Thunderbolt GC10	JM109	HB101	BL21–T1 ^R	BL21 (DE3)–T1 ^R	BL21 (DE3) pLysS–T1 ^R	BL21 (DE3) pLysE–T1 ^R
Analogous to DH5a	√								
Analogous to NovaBlue and XL1 Blue				√					
Analogous to DH10B		√	√						
Strain Background	K12	K12	K12	K12	K12xB	B	B	B	B
Transformation Efficiency (cfu/µg pUC plasmid DNA)	10 ⁹	10 ⁹	10 ¹⁰	10 ⁹	10 ⁹	10 ⁶	10 ⁷	10 ⁶	10 ⁶
Cloning Strain	√	√	√	√	√				
Expression Strain (lon and ompT protease deficient)						√	√	√	√
Blue/White Selection (with appropriate construct)	√	√	√	√					
T1 and T5 bacteriophage resistant (tonA)	√	√	√			√	√	√	√
T7 promoter systems							√	√	√
F' episome for single strand rescue				√					
Ideal for cloning methylated DNA		√	√		√				
lacIq (higher level of lac repressor)				√					
Highest quality DNA preparation (endA)	√	√	√	√					
General recombination deficient for insert stability (recA)	√	√	√	√	√				
Electrocompetent			√						

World Headquarters

3050 Spruce St., St. Louis, MO 63103
(314) 771-5765
sigma-aldrich.com

Order/Customer Service (800) 325-3010 • Fax (800) 325-5052

Technical Service (800) 325-5832 • sigma-aldrich.com/techservice

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Accelerating Customers' Success through Leadership in Life Science, High Technology and Service

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