

ChemiComp GT116

Chemically competent *E. coli* GT116 cells

Catalog code: gt116-11, gt116-21

<https://www.invivogen.com/chemicomp-gt116>

For research use only

Version 20J14-MM

PRODUCT INFORMATION

Contents

ChemiComp GT 116 are provided frozen and are available in two sizes:

- 5 x 0.1 ml (5-10 transformations): # gt116-11
- 5 x 0.2 ml (10-20 transformations): # gt116-21

GT116 Genotype: *F* *mcrA* Δ (*mrr-hsdRMS-mcrBC*) ϕ 80*lacZ* Δ M15 Δ *lacX74* *nupG* *recA1* *araD139* Δ (*ara-leu*)7697 *galE15* *galK16* *rpsL*(*StrA*) *endA1* Δ *dcm* Δ *sbcC-sbcD*

Biosafety level: 1

Storage and stability

- All chemically competent cells are shipped on dry ice.
- Upon receipt, store competent cells **immediately** at -80 °C
- Competent cells are stable for 6 months from date of receipt when properly stored.

Quality control

The transformation efficiency of chemically competent cells are evaluated periodically and are guaranteed to be stable for six months from date of receipt when properly stored.

SPECIAL HANDLING

Upon receipt, verify that the dry ice is still present in shipping box and that the competent cells are not thawed. Immediately place the competent cells at -80 °C. Transformation efficiency may decrease with each freeze and thaw cycle.

DESCRIPTION/PROPERTIES

GT116 is a *sbcCD* deletion strain specifically engineered to support the growth of plasmid DNAs carrying hairpin structures, such as vectors expressing small interfering RNA. Hairpin structures are known to be unstable in *E. coli* due to their elimination by a protein complex called SbcCD that recognizes and cleaves hairpins¹. To increase their stability in *E. coli*, InvivoGen has developed GT116 by deleting the *sbcC* and *sbcD* genes. This modification significantly improves the number of recombinant clones harboring a plasmid with hairpin structures. This strain contains the *rpsL* (*StrA*) gene which confers resistance to streptomycin.

Transformation efficiency: 1×10^9 cfu/ μ g

1. Connelly JC. *et al.*, 1998. The SbcCD nuclease of escherichia coli is a structural maintenance of chromosomes (SMC) family protein that cleaves hairpin DNA. Proc. Natl. Acad. Sci. USA 95:7969-7974

TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Hong Kong: +852 3622-3480

E-mail: info@invivogen.com

TRANSFORMATION

Introduction

The following protocol describes a method used to introduce DNA into bacterial host for efficient and convenient construction or maintenance of plasmid recombinants, and blue/white screening.

Additional required materials (not provided)

- LB agar plates with appropriate antibiotic.
- 37 °C shaking Incubator
- Ice bucket
- 42 °C water bath
- LB or SOB medium for plating

METHOD

Before starting:

- Prepare LB agar plates containing the appropriate antibiotics.
- Set water bath to 42 °C.
- Pre-chill appropriate number of 1.5 ml tubes in ice.

1. Thaw the appropriate number of competent cells on ice (50 μ l per ligation or transformation reaction). Allow the cells to thaw on ice for 2-5 minutes.
 2. Gently flick the cells twice to resuspend cells. Pipet 50 μ l of cells to pre-chilled 1.5ml tubes and return tubes to ice.
 3. Add 1-5 μ l of ligation reaction or plasmid DNA to thawed cells. Mix by tapping gently and place on ice immediately.
 4. Incubate the tubes on ice for 30 minutes.
 5. Incubate the tubes in a 42 °C water bath for exactly 30 seconds.
 6. Place the tubes back on ice for 1-2 minutes.
 7. Add 450 μ l of room temperature LB or SOC medium to each reaction. (Practice sterile techniques to avoid contamination.)
 8. Incubate tubes at 37 °C for 1 hour with shaking at 250 rpm.
 9. Spread 50-200 μ l of each reaction to separate, labeled LB agar plates containing the appropriate antibiotic.
- Note:* For high efficiency transformation rates, 10^1 to 10^4 dilution of reaction should be spread.
10. Incubate plates at 37 °C overnight.

RELATED PRODUCTS

Product	Description	Cat. Code
Blasticidin	Selection antibiotic	ant-bl-1
Hygromycin B Gold	Selection antibiotic	ant-hg-1
Zeocin™	Selection antibiotic	ant-zn-1