Escherichia coli, Strain GM2163λpir

Catalog No. NR-50351

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

Escherichia coli (E. coli), strain GM2163λpir contains the *pir* genes which allow genetic manipulations of vectors prior to transfer into *Staphylococcus* species. This strain is also a Dam and Dcm methylase mutant for transfer of plasmids into *Staphylococcus* isolates that do not accept *E. coli* DNA easily. Strain GM2163λpir has genotype F⁻*ara-14 leuB6 fhuA31 lacY1 tsx78 glnV44 galK2 galT22 mcrA dcm-6 hisG4 rfbD1 rpsL136 dam13*::Tn*9 xylA5 mtl-1 thi-1 mcrB1 hsdR2 λpir*.[1,2]

E. coli strains GM2163λpir and DH5αλpir were deposited in conjunction with vectors pKK22 with pKK30 and the complete set is available as BEI Resources NR-50352 (see Table 1 below for details). pKK22 and pKK30 were created to maintain stability in *E. coli* and *Staphylococcus* species without antibiotic selection during *in vitro* and *in vivo* experiments. The *E. coli* R6Kγ origin of replication of both vectors requires *pir*+ for replication which is provided in either GM2163λpir or DH5αλpir *E. coli* strains.[3]

Table 1: *E. coli* – *Staphylococcus* Vectors and Hosts

Catalog Number	Vector or Host	Comments
NR-50348	pKK22	For use in *E. coli* DH5αλpir or GM2163λpir or *Staphylococcus aureus* USA300 strains containing LAC-p01[2]
NR-50349	pKK30	pKK30 is a variant of pKK22, for use in *E. coli* DH5αλpir or GM2163λpir or *Staphylococcus* species not containing LAC-p01[2]
NR-50350	*E. coli* DH5αλpir	Host strain containing the *pir* genes for performing genetic manipulations prior to transfer into *Staphylococcus* (F⁻Φ80*dlacZ ΔM15 ΔlacZYA-argF U169 deoR supE44 hsdR17 recA1 endA1 gyrA96 thi-1 relA1*)[2]
NR-50351	*E. coli* GM2163 λpir	Host strain containing the *pir* genes for performing genetic manipulations. This strain is also a Dam and Dcm methylase mutant for transfer of plasmids into *Staphylococcus* isolates that do not accept *E. coli* DNA easily (F⁻*ara-14 leuB6 fhuA31 lacY1 tsx78 glnV44 galK2 galT22 mcrA dcm-6 hisG4 rfbD1 rpsL136 dam13*::Tn*9 xylA5 mtl-1 thi-1 mcrB1 hsdR2 λpir*)[2]

Material Provided:

Each vial of NR-50351 contains approximately 0.5 mL of *E. coli*, strain GM2163λpir in Tryptic Soy broth supplemented with 10% glycerol.

Packaging/Storage:

NR-50351 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:
Tryptic Soy broth, Nutrient broth or equivalent
Tryptic Soy agar, Nutrient agar, Tryptic Soy agar with 5% defibrinated sheep blood or equivalent
Incubation:
Temperature: 37°C
Atmosphere: Aerobic
Propagation:

1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at 37°C for 1 day.

Citation:

Acknowledgment for publications should read "The following reagent was contributed by Dr. J. L. Bose for distribution by BEI Resources, NIAID, NIH: *Escherichia coli,* Strain GM2163λpir, NR-50351."

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

Disclaimers:

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References:

1. Bose, J. L., Personal Communication.
2. Krute, C. N., et al. "Generation of a Stable Plasmid for *In Vitro* and *In Vivo* Studies of *Staphylococcus* Species." Appl. Environ. Microbiol. 82 (2016): 6859-6869. PubMed: 27637878.
3. Dunn, A. K., M. O. Martin and E. V. Stabb. "Characterization of pES213, a Small Mobilizable Plasmid from *Vibrio fischeri*." Plasmid 54 (2005): 114-134. PubMed: 16122560.

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