

***Escherichia coli*, Strain DH5αpir**

**Catalog No. NR-50350**

**For research use only. Not for use in humans.**

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

*Escherichia coli* (*E. coli*), strain DH5αpir contains the *pir* gene, which allows genetic manipulations of vectors prior to transfer into *Staphylococcus* species. Strain DH5αpir has genotype F-Φ80*dlacZ* Δ*M15* Δ*lacZYA-argF* U169 *deoR* *supE44* *hsdR17* *recA1* *endA1* *gyrA96* *thi-1* *relA1*.<sup>1,2</sup>

*E. coli* strains DH5αpir and GM2163λpir were deposited in conjunction with vectors pKK22 with pKK30 and the complete set is available as BEI Resources NR-50352 (Table 1). 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 DH5αpir or GM2163λpir *E. coli* strains.<sup>3</sup>

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

Catalog Number	Vector or Host	Comments
NR-50348	pKK22	For use in <i>E. coli</i> , strains DH5αpir or GM2163λpir or <i>S. aureus</i> USA300 strains containing LAC-p01 <sup>2</sup>
NR-50349	pKK30	pKK30 is a variant of pKK22, for use in <i>E. coli</i> , strains DH5αpir or GM2163λpir or <i>Staphylococcus</i> species not containing LAC-p01 <sup>2</sup>
NR-50350	<i>E. coli</i> , Strain DH5αpir	Host strain containing the <i>pir</i> genes for performing genetic manipulations prior to transfer into <i>Staphylococcus</i> <sup>3</sup>
NR-50351	<i>E. coli</i> , Strain GM2163λpir	Host strain containing the <i>pir</i> genes for performing genetic manipulations. This strain is also a Dam and Dcm methylase mutant for transfer of plasmids into <i>Staphylococcus</i> isolates that do not accept <i>E. coli</i> DNA easily. <sup>3</sup>

**Material Provided:**

Each vial of NR-50350 contains approximately 0.5 mL of *E. coli*, strain DH5αpir in Tryptic Soy broth supplemented with 10% glycerol.

**Packaging/Storage:**

NR-50350 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 or equivalent  
Tryptic Soy agar or Nutrient agar or 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 obtained through BEI Resources, NIAID, NIH: *Escherichia coli*, Strain DH5αpir, NR-50350.”

**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 (BMBL). Current Edition. Washington, DC: U.S. Government Printing Office.

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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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