

***Escherichia coli*, Strain 83972**

**Catalog No. HM-50**

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

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

Bacteria Classification: *Enterobacteriaceae*, *Escherichia*

Species: *Escherichia coli*

Strain: 83972 (also referred to as ABU 83972)<sup>1</sup>

Serotype: ON:KN (N = nontypeable)<sup>1</sup>

Original Source: *Escherichia coli* (*E. coli*), strain 83972 was isolated from the urine of a young girl with a three-year history of asymptomatic bacteriuria (ABU) with stable renal function in Gothenburg, Sweden.<sup>1,2</sup>

Comments: *E. coli*, strain 83972 ([HMP ID 358](#)) is a reference genome for [The Human Microbiome Project](#) (HMP). HMP is an initiative to identify and characterize human microbial flora. The complete genomic sequence of *E. coli*, strain ABU 83972 was first made available by C. Svanborg, who isolated this strain (GenBank: [CP001671](#)). *E. coli*, strain 83972 was sequenced by the Human Genome Sequencing Center at [Baylor College of Medicine](#) (GenBank: [ACGN00000000](#)).<sup>3</sup>

Note: HMP material is taxonomically classified by the depositor. Quality control of these materials is only performed to demonstrate that the material distributed by BEI Resources is identical to the deposited material.

*E. coli* is a Gram-negative, rod-shaped bacterium which occurs singly or in pairs. It is a major facultative inhabitant of the large intestine. *E. coli*, strain 83972 has been shown clinically and experimentally to persist in the human bladder for extended periods without producing overt symptoms of infection, even showing potential as a probiotic.<sup>4,5,6</sup> It lacks functional forms of the three uropathogenic *E. coli* (UPEC) class fimbriae (P, type 1, and F1C) associated with symptomatic urinary tract infections.<sup>4,7</sup> *E. coli*, strain 83972 persists in the human bladder by virtue of fast growth and a failure to trigger host defense mechanisms.<sup>4</sup>

**Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture in Tryptic Soy broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

**Packaging/Storage:**

HM-50 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:

Nutrient broth or Tryptic Soy broth or equivalent  
Nutrient agar or Tryptic Soy 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 as part of the Human Microbiome Project: *Escherichia coli*, Strain 83972, HM-50."

**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 \(BMBL\)](#), 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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**References:**

1. Andersson, P., et al. "Persistence of *Escherichia coli* Bacteriuria Is Not Determined by Bacterial Adherence." Infect. Immun. 59 (1991): 2915-2921. PubMed: 1879917.
2. [HMP 358](#) (*Escherichia coli*, strain 83972)
3. Zdziarski, J., et al. "Host Imprints on Bacterial Genomes-Rapid, Divergent Evolution in Individual Patients." PLoS Pathog. 6 (2010): e1001078. PubMed: 20865122.
4. Klemm, P., V. Hancock and M. A. Schembri. "Mellowing Out: Adaptation to Commensalism by *Escherichia coli* Asymptomatic Bacteriuria Strain 83972." Infect. Immun. 75 (2007): 3688-3695. PubMed: 17502385.
5. Darouiche, R. O., et al. "Bacterial Interference for Prevention of Urinary Tract Infection: A Perspective, Randomized, Placebo-Controlled, Double-Blind Pilot Trial." Clin. Infect. Dis. 41 (2005): 1531-1534. PubMed: 16231269.
6. Trautner, B. W., R. A. Hull and R. O. Darouiche. "*Escherichia coli* 83972 Inhibits Catheter Adherence by a Broad Spectrum of Uropathogens." Urology 61 (2003): 1059-1062. PubMed: 12736047.
7. Hull, R. A., et al. "Virulence Properties of *Escherichia coli* 83972, a Prototype Strain Associated with Asymptomatic Bacteriuria." Infect. Immun. 67 (1999): 429-432. PubMed: 9864249.

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