**Borrelia afzelii**, Strain Pko

Catalog No. NR-51676

For research use only. Not for human use.

**Contributor:**
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**Manufacturer:**
BEI Resources

**Product Description:**

*Bacteria Classification:* Spirochaetaceae, *Borrelia*

*Species:* *Borrelia afzelii*

*Strain:* Pko

*Original Source:* *Borrelia afzelii (B. afzelii)*, strain Pko was isolated in 1984 from the skin of a human with erythema migrans (Lyme borreliosis) in Germany.1,2

*Comments:* *B. afzelii*, strain Pko is reported to be multi-locus sequence type (MLST) ST-71 with a genome comprised of one circular chromosome, nine circular plasmids and seven linear plasmids.2,3 The complete genome of *B. afzelii*, strain Pko has been sequenced (GenBank: CP000395).

*B. afzelii* is a motile spirochete transmitted by the hard tick *Ixodes ricinus* and a causative agent of Lyme borreliosis in Europe and Asia, where it is primarily associated with cutaneous symptoms, such as acrodermatitis chronica atrophicans.2,4 It is one of the three main Lyme borreliosis spirochetes in Eurasia and can be distinguished from *B. garinii* and *B. valaisiana*, by reservoir host, with rodents as the host for *B. afzelii* and birds as the host for *B. garinii* and *B. valaisiana*.4,5

**Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture in Revised Barbour-Stoenner-Kelly broth supplemented with 15% glycerol.

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

**Packaging/Storage:**

NR-51676 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:**

Revised Barbour-Stoenner-Kelly broth or equivalent (Appendix I)

*Note:* Medium should be prepared fresh before each use.

**Incubation:**

*Temperature:* 32°C to 34°C

*Atmosphere:* Microaerophilic

**Propagation:**

Note: It is recommended that NR-51676 be cultured in 24-well plates until growth is established from the frozen vial.

1. Place the frozen vial in a 35°C to 37°C water bath and thaw for approximately 2 to 3 minutes. Immerse the vial just enough to cover the frozen material. Do not agitate the vial. Do not leave the vial in the water bath after it is thawed.

2. Immediately after thawing, aseptically transfer the contents of the vial to 2 wells of a 24-well plate containing 1.5 mL fresh Revised Barbour-Stoenner-Kelly medium per well.

3. Incubate the plate at 32°C to 34°C. Do not shake culture during growth. It may take up to 21 days for the culture to establish from the frozen state.

**Biosafety Level**: 2


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Product Information Sheet for NR-51676

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APPENDIX I: REVISED BSK MEDIUM (ATCC® MEDIUM: 1914)

1. Prepare the Revised BSK medium directly before each use following the recipe below by dissolving each component one at a time in distilled water:

   HEPES 5.64 g
   Neopeptone 4.7 g
   Sodium citrate 0.7 g
   Glucose 5.64 g
   NaHCO₃ 2.0 g
   TC-Yeastolate 2.0 g
   Sodium pyruvate 0.75 g
   N-acetylglucosamine 0.37 g
   Bovine serum albumin, fraction V 47.0 g
   Distilled water 840 mL

2. Adjust the pH of the base medium to 7.5 using 1 N HCl or 1 N NaOH and filter-sterilize using a 0.22 µm filter.

3. Aseptically add the next two components to the base medium:

   CMRL 1066 Medium, 10× (w/o Glutamine and NaHCO₃) 100.0 mL
   Heat-inactivated rabbit serum 60.0 mL

4. Mix well and aseptically dispense into appropriate vessels. The medium may be stored in aliquots of 50 mL in freezer-safe vessels and stored frozen at -20°C until use. Once thawed, each aliquot should be kept at 2°C to 8°C and used within one month.

5. Adjust the pH of the complete medium to 7.5 to 7.6, as needed, using sterile solutions of 1 N HCl or 1 N NaOH, before use.

Note: Medium should be prepared fresh directly before each use or immediately aliquoted and frozen at -20°C until needed. Once thawed, each aliquot should be kept at 2°C to 8°C and used within one month.

References:
1. Fingerle, V., Personal Communication.

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