



ADDRESSING DERMAL BACTERIA

The purpose of this technical bulletin is to inform AllCells' clinical grade customers of the potential risk of dermal bacteria contaminating bone marrow collections. Since these collections puncture the skin, the presence of dermal bacteria might be unavoidable; these types of bacteria exist on the surface of the skin and within the dermal layer. Skin preparation and draping are methods through which AllCells mitigates bacterial contamination. These methods have been proven to be successful.

RISK MITIGATION

According to published research, dermal bacteria can be present in bone marrow collections^{1,2}. These bacteria include the following species: *Propionibacterium acnes*, *Propionibacterium humerusii*, and *Staphylococcus capitis*. Prior to the puncturing the skin for collection, the puncture site is routinely disinfected using antiseptics. However, applying antiseptics alone does not kill all bacteria on the skin, nor does the antiseptics kill the bacteria in the deeper layers of the skin¹. Therefore, a positive sterility result is not uncommon¹.

Review of published literature has lead AllCells to implement additional procedures to mitigate the inherent risk of bacterial contamination during collections. In subsequent order, AllCells performs the following procedures:

1. Clinicians use a betadine impregnated sterile drape over the bone marrow puncture site
2. Clinicians use a two-needle method for bone marrow aspirations, wherein one needle is used per side to collect bone marrow
3. Clinicians aspirate and discard ~1mL from the initial bone marrow collection site to remove any potential bacterial contaminants

Regardless of AllCells efforts to minimize bacterial contamination, the presence of such microorganisms are impossible to avoid altogether. AllCells will continue proactively addressing this issue by employing best practices based on empirical evidence from published research. AllCells is committed to providing the life science community with high quality human blood and bone marrow derived cells, while maintaining transparent communication with its clients. By addressing the risk associated with dermal bacteria, AllCells maintains the highest quality standards in both processing primary cells and informing its clients.

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1. Mollerup, Sarah, et al. "Propionibacterium Acnes: Disease-Causing Agent or Common Contaminant? Detection in Diverse Patient Samples by Next-Generation Sequencing." *Journal of Clinical Microbiology*, American Society for Microbiology Journals, 1 Apr. 2016, jcm.asm.org/content/54/4/980.
2. Leo AM, Salvadego MM, Piva MG, et al. "From the donor's arm to blood product: a study on bacterial contamination of apheresis platelet concentrates." *Blood Transfus.* 2007;5(3):130-3.
3. Abidi, Maheen Z. et al. " Importance of Site Preparation in Reducing the Risk of Bacterial Contamination during Bone Marrow Harvest" *Biology of Blood and Marrow Transplantation*, Volume 23, Issue 3, S184 - S185

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