Designation: E1874 – 14

Standard Test Method for Recovery of Microorganisms From Skin using the Cup Scrub Technique[1]

This standard is issued under the fixed designation E1874; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method is designed to recover microorganisms from the skin of human subjects or human subject surrogates (animal skin, isolated porcine skin, human skin equivalents, and other such surfaces).

1.2 Knowledge of microbiological techniques is required for these procedures.

1.3 It is the responsibility of the investigator to determine if Good Laboratory Practice (GLP) and Good Clinical Practice (GCP) is required.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E1054 Test Methods for Evaluation of Inactivators of Antimicrobial Agents

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *contralateral, adj*—on or relating to the opposite side (of the body).

3.1.2 *resident flora, n*—microorganisms that live and multiply on skin, forming a permanent population.

3.1.3 *scrub cups, n*—sterile cylinders of suitable composition (that is, glass, ceramic, stainless steel, plastic, etc.) used to isolate a sample area of skin (or skin equivalent) and confine a aliquot of liquid which is used to facilitate the scrubbing of the skin and removal of microorganisms from the skin surface by pipetting.

3.1.4 *transient organisms, n*—organisms from the environment that contaminate but do not normally colonize skin.

4. Summary of Test Method

4.1 This test method describes a technique suitable for the recovery of resident and transient microorganisms from human or animal skin; the technique may be used in situ within clinical protocols or *in vitro* for studies using isolated skin or skin equivalents.

4.1.1 Resident microorganisms or transient microorganisms (previously applied to a test site), are recovered from the site by pressing a rigid cylinder against the skin with sufficient pressure to form a seal and instilling recovery liquid into the cylinder. The surface of the skin is then mechanically 'scrubbed' with a glass rod, rubber policeman, or some other suitable device for a prescribed period of time. The fluid is pipetted from the cylinder into a test tube, or other suitable receptacle, for further analysis.

5. Significance and Use

5.1 The procedure can be incorporated into protocols used to evaluate test materials containing antibacterial ingredients that are intended to reduce significantly the number of organisms on intact skin. It also may be used to provide an indication of residual antibacterial activity. Examples of test materials, for which this method is applicable, include hand-washes, surgical scrubs, acne reduction products, and others. For each type of test material, types of resident flora or transient organisms, or a combination thereof, may differ and should be considered (this is, aerobic bacteria, anaerobic bacteria, yeast, or mold).

5.2 The procedure may be used in protocols intended to evaluate and identify resident flora from the skin.

5.3 Performance of this technique may require the knowledge of regulations pertaining to the protection of human subjects if the protocol involves application of the technique to the skin of human subjects.

[1] This tests method is under the jurisdiction of ASTM Committee E35 on Pesticides, Antimicrobials, and Alternative Control Agents and is the direct responsibility of Subcommittee E35.15 on Antimicrobial Agents.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.