**METHODS**

Tests were carried as described by Lloyd et al. (1998, 2001).

Recent canine isolates of the three organisms were grown overnight at 37°C in brain heart infusion agar or, for *Malassezia*, on modified Dixon’s agar (MDA) for 3 days at 34°C. Growth was then suspended in Mueller Hinton broth & 20 µl of each suspension added to 2 ml of either undiluted test product, a 1/5 dilution in sterile distilled water of the test product (Epi-Otic® or Otoclean®) or PBS (controls). The suspensions were held at room temperature (21°C).

Duplicate aliquots were removed after 1, 2, 4, 8, 16 & 30 min., spread plated on 5% blood agar or MDA & incubated for 48h at 37°C (bacteria) or 72 h at 34°C (*Malassezia*). Colony forming units (cfu) on the media were counted and then converted to cfu/ml of the original suspension.

**RESULTS**

**Staphylococcus intermedius & Malassezia pachydermatis**

The staphylococcal and *Malassezia* isolates failed to survive 1 minute of exposure with both test products, either undiluted or diluted 1/5. Growth was not inhibited in control suspensions, which remained > 12500 cfu/ml for staphylococci, and > 23000 cfu/ml for *Malassezia*, throughout the 30-min. period.

**Pseudomonas aeruginosa**

Epi-Otic® killed all 5 of the *Pseudomonas* isolates within 1 minute, both undiluted and at 1/5 dilution. Two isolates were able to survive for 2 minutes, and one for 8 minutes, with the 1/5 diluted Otoclean®. Control suspensions remained > 29000 cfu/ml throughout the 30-min. period.

---

**CONCLUSIONS**

- Both ear cleansers have excellent potency *in vitro* against *S. intermedius* and *M. pachydermatis*.
- Epi-Otic® has rapid and complete activity against *Ps. aeruginosa* whilst Otoclean® has delayed activity against some isolates when diluted 5-fold.

Importance:

- Exudates and glandular secretions, which may be present in significant amounts in cases of otitis externa, are likely to dilute the ear cleanser *in vivo*.
- Potent activity of Epi-Otic® against *Pseudomonas* is of special interest in view of the increasing resistance shown by this genus against antimicrobials that may be used following cleansing agents in the therapy of otitis externa.

---

**REFERENCES**


