

**Pneumococcal replicative state in relation to its adherence capacity to A549 cell line : a preliminary in vitro analysis.**

**ABSTRACT**

This study was to compare the replication capacity of pneumococcal isolates (serotypes 1, 7F, 19F and 23F) with their adherence pattern to monolayer cells (A549). For standardization purposes, all isolates showed a normal growth curve in both bacteriological (THB + 0.5% yeast extract with and without 2% FBS) and cell culture media (RPMI + 2% FBS). In the former media, a shorter lag phase was observed for isolate serotypes 1 and 7F in presence of serum while in the later; growth yield was lower for all isolates with stationary phase approaching OD600 of 0.01 as compared to 1.0 in bacteriological media. In the replicative analysis at different growth phases of the isolates in cell culture media, growth capacity at 3 h post-incubation was frequently twice as that at 1 h, and that at early-log phase was frequently higher than that at mid-log phase at both post-incubation times. Adherence was frequently the least at early-log phase although the isolates were in the most active state of replication to increase the number of pneumococcal cells to adhere. At mid- and late-log phases, pneumococcal adherence was frequently higher although the replication was reduced. This study marks the potential correlation between pneumococcal growth fitness and adherence capacity whereby the later may not be superior during the early growth phase.

**Keyword:** Pneumococci; Adherence; THB, RPMI; Growth phase.