

Laboratory diagnosis of chancroid using species-specific primers from *Haemophilus ducreyi* groEL and the polymerase chain reaction

Abstract:

To enhance laboratory identification of *Haemophilus ducreyi*, the causative agent of the genital ulcer disease chancroid, a polymerase chain reaction (PCR) assay was developed using target DNA sequences from the essential *H. ducreyi* gene, groEL. Positive reactions were obtained in this PCR assay with 139 isolates of *H. ducreyi* from patients in worldwide locations from the 1940s to the 1990s. In contrast, 24 other bacterial species were negative. When genital ulcer specimens from 162 African patients with clinically diagnosed chancroid were evaluated, 66 were culture positive. The sensitivity of PCR as compared with culture was 89% (59 of 66), and specificity was 79% (76 of 96). However, representative samples of the 20 culture-negative, PCR-positive specimens were confirmed as positive by a second PCR assay using different *H. ducreyi*-specific primers. Thus, combined results of culture and PCR detected *H. ducreyi* in 86 specimens, with resolved sensitivities of 92% (79 of 86) for PCR, and 77% (66 of 86) for culture. These results suggest that PCR assays for *H. ducreyi* have great potential for augmenting or replacing problematic cultural techniques