

# **INTRAGENOMIC VARIATION IN THE ITS2 RDNA IN THE HUMAN LOUSE, *PEDICULUS HUMANUS*: ITS2 IS NOT A SUITABLE MARKER FOR POPULATION STUDIES IN THIS SPECIES**

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The two internal transcribed spacers (ITS) of ribosomal DNA are often used as markers for populations of insects. We studied the ITS2 of the head and body lice of humans to determine whether this gene is a suitable marker for populations of these insects. ITS2 sequences were amplified by PCR from lice from four different countries: Australia, China, Japan and the USA. Direct cycle-sequencing of some of these PCR products gave equivocal nucleotide chromatograms. This indicated some lice had more than one ITS2 sequence and so we cloned PCR products from these lice. Temperature gradient gel electrophoresis (TGGE) revealed that 50 of the 67 clones we screened had different nucleotide sequences. All lice had several ITS2 types, including those with unequivocal chromatograms. A phylogenetic tree of 15 different ITS2 sequences showed that the ITS2 sequences from individual lice were not monophyletic. We conclude that the ITS2 is not a useful marker of populations for *Pediculus humanus*.