Chromosome specific markers reveal conserved linkage groups in spite of extensive chromosomal size variation in Trypanosoma cruzi

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The karyotypes of three cloned stocks, CL Brener (CL), CA I/72 (CA) and Sylvio X10/7 (X10), of Trypanosoma cruzi were studied by pulsed-field gel electrophoresis followed by ethidium bromide staining and hybridization with 35 different probes, 30 of which identified single chromosomes. The chromosome-specific probes identified between 26 and 31 chromosomal bands in the three cloned stocks, corresponding to 20 unique chromosomes in CL and 19 in CA and X10. Considering the DNA content of the parasite, it was predicted that the markers recognise at least half of all T. cruzi chromosomes. A majority of identified chromosomes showed large differences in size among different strains, in some cases by up to 50%. Interestingly, CL had in general larger chromosomes than the two other studied cloned stocks. Several of the markers showed linkage and nine different linkage groups were identified, each comprising 2-4 markers. The linkage between the markers was maintained in 8 of the 9 linkage grou