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Redescription of Chinese *Leishmania* isolates based on morphology and molecular phylogeny

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Leishmaniasis are a complex range of diseases caused by infection with protozoan parasites of the genus *Leishmania,* which is still endemic in the west and northwest frontier regions of China. The previous phylogenetic studies based on COII, 18 S rRNA and 7SL RNA of Chinese *Leishmania* isolates indicate that the isolates from China may have had a more complex evolutionary history and an undescribed *Leishmania* species does exist in China. The Chinese representative isolates morphology were characterized and compared by cell and flagellum length, subpellicular microtubules counts using optical and electron microscopy. The *Hsp* 70 gene and cyt *b* gene sequences of Chinese isolates, two reliable markers for the species discrimination and phylogenetic analysis within the genus *Leishmania* were sequenced after PCR amplification. Then the sequences were aligned and the method of Bayesian inference was used for phylogenetic analysis. Through light microscopic observation, there existed differences among 5 *Leishmania* representatives from different foci of China in shape in the same period. Through electron microscopy, the promastigotes of 5 strains showed roughly identical intracellular structures except that the Golgi apparatus has not yet been observed in the isolate MHOM/CN/90/SC10H2. 11 *Hsp* 70 sequences and 15 cyt *b* sequences were obtained in this study and then analyzed with 54 *Hsp* 70 sequences and 36 cyt *b* sequences retrieved from Genbank, respectively. Phylogenetic analysis indicated that Chinese *Leishmania* isolates occurred in four groups: *L. donovani* complex, *L. tropica* complex, *L. major* complex and *Sauroleishmania*. In conclusion, there are morphological differences among *Leishmania* isolates from different foci of China. The undescribed *Leishmania* sp. of China, which was most closely related to *L. tarentolae* belongs to *Sauroleishmania*. The ultrastructure characteristic of *Leishmania* sp. (MHOM/CN/90/SC10H2) provides evidence to support it.

Biography

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