Nitro aryl 1,4-dihydropyridine derivatives: Effects of Trypanosoma cruzi

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A series of nitro aryl 1,4-dihydropyridine derivatives produced inhibition of both cell growth and oxygen consumption on Tulahuen and LQ strains, and clone Dm 28c of epimastigotes of Trypanosoma cruzi. Nicardipine was found to be the most potent derivative in both growth cell (I50 = 70 ?M) and oxygen uptake (I50 = 26 ?M in intact parasites, I50 = 325 ?M in situ mitochondria). A correlation between the inhibitory effects on the growth cell and the apparent first order kinetic for the uptake of the 1,4-dihypyridine derivatives by T. cruzi epimastigotes was found. Thus, nicardipine, the most potent derivative, exhibited the highest apparent rate constant, k(u), (0.043 min-1). On the other hand, no susceptibility differences by strains and clone Dm 28c to the action of these drugs were found.