

Title:**Molecular detection of equine trypanosomosis from Riyadh region, Saudi Arabia**

This is a cross-sectional study carried out to detect possible trypanosomes infecting horses and donkeys in Riyadh region, Saudi Arabia. Blood were collected from of 368 horses and 142 donkeys, DNA extraction and subsequently subjected to catch –all ITS1-PCR followed *T. evansi* species specific RoTat1.2-PCR. The universal ITS1-PCR showed that horses were more infected with *T. evansi* 12 (3.26%) than donkeys 4 (2.81%). However, application of RoTat 1.2-PCR revealed, RoTat 1.2 VSG gene was absent in 3 and 1 positive ITS1-PCR samples of horses and donkeys respectively. This could be explained by circulation of *T. evansi* type B in Saudi Arabia. Thereafter, risk analysis revealed that *T. evansi* was more prevalent in females of both animal species 9 (3.73%) and 3 (3.44%) than males 1(1.81%) and 3(2.36%) respectively. Whereas, elder animals of age more than five years have had higher *T. evansi* prevalence 8 (5.25%) and 4(4.3%) than the younger ones that of less than 5 years. However, the results show no significant effects of sex and age on the prevalence of Trypanosomosis in horses ($p=0.4810$ and $p=0.0664$) and donkeys ($p=0.5673$ and $p= 0.1408$), respectively. It is concluded that, *T. evansi* is more prevalent in horses than in donkeys and that the females and animal elder than 5 years have had higher parasite load in both animal species. Moreover, None RoTat1.2 gene *T. evansi* type B is circulating in Saudi Arabia though this needs additional confirmation step. To our knowledge, this is the first study demonstrating *T. evansi* type B out of Africa.