

denominated CICS (Crotoxin inhibitor from *Crotalus* serum), was isolated and characterized from *Crotalus durissus terrificus* (Cdt) sera (Perales et al. *Eur. J. Biochem.* 227, 19, 1995). The objective of this work was to detect CICS mRNA in various tissues from Cdt using RT-PCR as a method to study CICS gene expression. **Methods and results:** Specific non degenerated primers, corresponding to the amino and carboxy terminal regions of the CICS, were synthesized, based on the already known CICS sequence (Fortes-Dias, C.L. et al. *J. Biol. Chem.* 269,15646, 1994). Primers also contain Bam HI and Not I restriction site to allow cloning of amplified products. An initiation codon was introduced before the arginine codon, which corresponds to the amino terminal residue of the processed CICS polypeptide. A cDNA clone, equivalent to 23-kDa subunit of CICS, was obtained by RT-PCR performed on total RNAs, extracted from several Cdt tissues. These RT-PCR allowed the amplification of a single product of 582 bp from the liver, and in lower concentrations, from other tissues. Moreover in all extra hepatic tissues, two additional fragments with 680 and 1000 bp were amplified. **Conclusion:** CICS mRNA is present in liver as well as in other tissues, showing the CICS synthesis in these tissues. In extra hepatic tissues, the RT-PCR amplification demonstrated the occurrence of two additional segments which showed heterogeneous quantitative distribution in the different tissues analysed. **Acknowledgements:** Supported by CAPES and CNPq.

Why non-poisonous snakes cause accidents? A.B.P. Albolea^{a, b, c}, M.G. Salomão^{a, b}, R.S. Jordão^{a, d}, S.M. Almeida-Santos^a (^aLaboratório de Herpetologia, Instituto Butantan, Av. Vital Brasil, 1500, Butantã, 05503-900, São Paulo, SP; ^bUniversidade de Guarulhos; ^cFIEO-Fundação Instituto de Ensino para Osasco; ^dEscola de Aplicação da Faculdade de Educação, USP).

Activity pattern may determine snakebite incidence, whether regarding venomous or non-venomous snakes. This work analysed the biology of the colubrids *H. modestus* and *L. miliaris* in an attempt to predict and prevent such accidents. Registers from Hospital Vital Brazil in I. Butantan and museum specimens were examined to determine the time accidents occur and their relationship with reproductive stage and feeding condition. Snakebite for both species was more common in summer ($N=170$), when secondary vitellogenesis was recorded. Mating was registered for *H. modestus* in this season suggesting that reproduction contributes to the incidence of snakebite. For both species feeding occurs throughout the year and no significant differences between fed and non-fed snakes collected in the four seasons were observed (*H. modestus*: $X^2=5.1$, $p>0.25$, $N=88$; *L. miliaris* $X^2=3.9$, $p>0.25$, $N=48$). Non-fed *H. modestus* caused most of the accidents and they are captured more frequently than those with full stomachs ($X^2=53.4$, $p<0.001$, $N=80$). Such differences in captures were not recorded in male *L. miliaris* ($X^2=4.9$, $p>0.05$, $N=48$), but among fed female *L. miliaris* ($X^2=6.2$, $p<0.05$, $N=44$). Concerning feeding status, data show a similar pattern when comparing *H. modestus* which caused accidents and those collected in other situations. If the same can be inferred for *L. miliaris*, fed snakes would cause

more accidents. Foraging, therefore, seems to be a very important factor leading to snakebite. Experiments using the saliva of both species showed high hemorrhagic activity for *L. miliaris*. *H. modestus* killed mice (18–22 g) in 10 min, exhibiting spasms, distension of posterior legs and light hemorrhage. When tested on fish (4–6 g), their usual prey, their saliva caused decrease of opercular beatings and general immobilization for about 30 min, followed by recovering and death. Symptoms like hemorrhage, pain and edema are the most common manifestations of these human envenomations. Results show that snake activity, particularly feeding and reproduction, increase significantly chances of bites caused by these non-poisonous snakes.