**Rhipicephalus microplus** Heat Shock proteins

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**Introduction:** During its free-living stage the tick *Rhipicephalus* experiences changes in temperature, humidity and exposition to chemical agents. In several species, Heat Shock Proteins (HSPs) expression increase during stress conditions and is crucial for homeostasis. This work addresses tick HSP gene expression in order to understand their role in tick physiology. **Material and Methods:** Searching for HSP and HSP-like sequence in a tick transcriptome database (Rm-INCT-EM) revealed several putative HSP sequences. Four ORF sequences were cloned from RNA collected from salivary gland and ovary of partially engorged female. Semi-quantitative RT-PCR was used to analyze the expression profile in tissues of fully and partially engorged female (gut, ovary, salivary gland and fat body), egg, larvae, male and BME26 cells. *In silico* analysis were done using servers: Prosite, SignalP4.1, NetNGlyc1.0, NetOGlyc3.1 and Protparam. Also, the effect of temperature change in BME26 cells viability was analyzed. **Results and Discussion:** 58 HSP and HSP-like sequences were found in *R. microplus*. HSP90, HSP70 and HSPSmall were cloned. Tick HPS90 deduced amino acid sequence has a HSP90-protein family signature and no signal peptide. HSP70 shows three HSP70-protein family signatures, an endoplasmic reticulum targeting sequence, a predicted signal peptide and two putative O-glycosylation sites. HSPSmall has a HSP20 protein family profile and no predicted signal peptide. HSP90 sequence is expressed in all female tissues, but not in egg, larvae, male or BME26 cells. HSP70 shows three HSP70-protein family signatures, an endoplasmic reticulum targeting sequence, a predicted signal peptide and two putative O-glycosylation sites. HSPSmall has a HSP20 protein family profile and no predicted signal peptide. HSP90 sequence is expressed in all female tissues, but not in egg, larvae, male or BME26 cells. HSP70 is transcribed in salivary gland of partially engorged female, in all tissues of fully engorged female, and in BME26 cells. BME26 cell proliferation was not altered by any of temperature change. **Conclusion:** *R. microplus* HSPs are differentially expressed throughout tissues and life stages, which might be related to specific roles in tick physiology.


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