

Table of content

Introduction	
A. Thermal scavenging ants as a model for understanding heat-tolerance	5
Thermal-scavenging in ants	7
Shifting down thermal equilibriums: understanding heat-budgets	9
Heat-tolerance adaptations in thermal scavenging ants	Erreur ! Signet non défini.
B. Cellular adaptations to cope with heat-stress	15
Thermal variation and cellular homeostasis.....	17
Resistance and tolerance adaptations to cope with shifts in temperatures	21
Heat-shock proteins: guardians of macromolecular integrity	22
Osmolytes accumulation.....	26
Controlling membrane fluidity	27
The antioxidant response: keeping ROS damages in line.....	27
Modifying cellular death thresholds: autophagic and apoptotic pathways.....	29
Conclusion.....	31
Chapter I	
Total Internal Reflection Accounts for the Bright Color of the Saharan Silver Ant.....	37
Quentin Willot, Priscilla Simonis, Jean-Pol Vigneron, Serge Aron	
Chapter II	
Proteome stability, heat hardening and heat-shock protein expression profiles in Cataglyphis desert ants	53
Quentin Willot, Cyril Gueydan, Serge Aron	
Chapter III	
Molecular chaperoning helps safeguarding mitochondrial integrity and motor functions in the Sahara silver ant Cataglyphis bombycinus.....	63
Quentin Willot, Patrick Mardulyn, Matthieu Defrance, Cyril Gueydan, Serge Aron	
Chapter IV	
Project : Parallel molecular evolution of thermal tolerance in thermal scavenging ants	79
Quentin Willot, Remy Perez, Cyril Gueydan, Matthieu Defrance, Serge Aron	
Discussion.....	95