The naked mole rat (*Heterocephalus glaber*) is a rodent species that has recently attracted the attention of researchers due to its remarkable lifespan (over 30 years) and resistance to diseases, including cancer. It has been demonstrated that high-molecular-weight hyaluronan present in the extracellular matrix (ECM) plays a significant role in these phenomena. This project aims to explore whether additional components of the ECM contribute to the exceptional longevity observed in rodents. Galectins may represent one such group of ECM-associated molecules. These carbohydrate-binding proteins are found both on the cell surface and intracellularly, where they play key roles in intercellular signaling, regulation of cell proliferation and the induction of apoptosis. They are known to play important roles in the immune system and in disease development, but their relationship with organismal aging remains to be further explored. The objective of this project is to conduct a detailed analysis of naked mole-rat galectins in terms of their structure and function. We will compare them with their human counterparts, study their physicochemical properties, and analyze their effects on cellular aging, apoptosis, and proliferation. To date, galectins in the naked mole rat have never been studied, which means our findings may pave new paths in the search for natural mechanisms that slow aging and counteract cancer. If naked mole rat galectins prove to be unique, they could serve as a source of inspiration for the development of novel biomedical therapies.