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Schistosoma mansoni extracellular vesicles and their impact on the immune system: glycosylated messengers in host-pathogen communication

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The purpose of life is to discover your gift. The work of life is to develop it. The meaning of life is to give your gift away.
- David S. Viscott, Finding your strength at difficult times: a book of meditations, 1993

The background of the page is a light blue and white illustration. It features a large microscope on the left side, with its lens and various adjustment knobs visible. Scattered around the microscope are several round-bottom flasks and beakers, some containing liquids. The overall style is clean and scientific, with a focus on laboratory equipment.

Appendices

Popular science summary (English & Dutch)

Nederlandse samenvatting voor niet-ingewijden

Curriculum Vitae

List of publications

Dankwoord / acknowledgements

Popular science summary (English)

The research in this thesis explores the interaction between the parasitic worm *Schistosoma mansoni* and the immune system. The co-evolution of these worms with the human host has enabled them to develop optimal strategies to influence the immune system. The studies presented focus on extracellular vesicles (EVs) released by the worms and the role of glycans (sugar molecules) in this interaction. Both adult worm and larval EVs contain glycans and have different effects on immune cells, such as B-lymphocytes and dendritic cells, stimulating the release of signaling molecules. The glycans on the EVs appear to be crucial for interacting with specific receptors on immune cells. This research contributes to understanding the communication between parasites and their hosts and could potentially lead to the development of new therapies for immune-related diseases.

Populair-wetenschappelijkesamenvatting(Nederlands)

Dit proefschrift behandelt de interactie tussen de parasitaire worm *Schistosoma mansoni* en het immuunsysteem. De evolutie van deze wormen samen met de menselijke gastheer heeft hen in staat gesteld optimale strategieën te ontwikkelen om het immuunsysteem te beïnvloeden. De beschreven studies richten zich op extracellulaire blaasjes (genaamd “extracellular vesicles”(EVs)) die door de wormen worden uitgescheiden en de rol van glycanen (suikermoleculen) in deze interactie. De EVs van zowel volwassen wormen als larven bevatten glycanen en hebben verschillende effecten op immuuncellen, zoals B-lymfocyten en dendritische cellen, waarbij ze afgifte van signaalmoleculen stimuleren. De glycanen op de EVs lijken belangrijk te zijn voor de interactie met specifieke receptoren op immuuncellen. Dit onderzoek draagt bij aan het begrijpen van de communicatie tussen parasieten en hun gastheer en kan mogelijk leiden tot de ontwikkeling van nieuwe therapieën voor immuunziekten.