LIPOPOLYSACCHARIDE DIFFERENTLY MODULATES MICRORNA PROFILES IN BOTH COLON EPITHELIAL CELLS AND THEIR EXTRACELLULAR VESICLES

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Lipopolysaccharide stimulation of colon epithelial and adenocarcinoma cells reveals selective packaging of specific miRNAs into extracellular vesicles that differs from the miRNA profile of host cells.

KEY POINTS

- After 24 hours of LPS treatment at 10 µg/ml, miR-146 and miR-451 were overexpressed in HCT116, Caco-2, and HCoEpiC colon cells, but the miRNA profiles in their secreted extracellular vesicles differed from the host cell profiles.
- In Caco-2 adenocarcinoma cell EVs, miR-122-5p, miR-451a, miR-30b-5p, 381-3p, and 99a-5p were upregulated while miR-20a-5p, miR-17-5p, miR-93-5p, miR-335-5p, and miR-378c were downregulated; miR-215-5p was downregulated in HCoEpiC EVs; no miRNA deregulation occurred in HCT116 EVs.
- After 48- and 72-hour LPS treatment, miRNA expression was deregulated only in HCOepic cells (miR-451a, miR-147b-3p, miR-146a-5p) but not in their secreted EVs.
- Certain miRNA sequences were found only in EVs and not in host cells, while some highly overexpressed miRNAs in cells were not packaged into EVs, suggesting a selective sorting mechanism.
- This study is relevant for researchers investigating miRNA biomarkers, extracellular vesicle biology, and inflammatory responses in colon cells.

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