ASTAXANTHIN ENHANCES LRP-1 MODULATED INSULIN SENSITIVITY AND AMYLOID-BETA CLEARANCE IN AN IN VITRO BLOOD-BRAIN BARRIER MODEL

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We sought to investigate if modulating LRP-1 activity via Astaxanthin (ASX) increases LRP-1 expression and insulin sensitivity in Alzheimer's Disease (AD). We examined the effects of ASX on LRP-1 expression, Aβ clearance and tau phosphorylation in the Blood-Brain Barrier (BBB).

RESULTS

pBCECs showed enhanced expression of LRP-1 when treated with ASX. Increased expression of LRP1, autophagy and reduced expression level of mTOR signaling markers were observed when pBCECs pre-incubated with ASX were further treated with Aβ. Preliminary micrographs demonstrated that there are autolysosomes and autophagosomes visible in the pBCECs.

CONCLUSION

Our results suggest that increased LRP1 expression by ASX enhances insulin sensitivity, autophagy induction and improves Aβ clearance. ASX could thus be a promising therapeutic candidate for Alzheimer’s disease.