Abstract

Recent studies have suggested that xanthophylls may modulate pancreatic lipase activity and influence lipid digestion and absorption. While the exact mechanisms underlying this modulation are still being elucidated, several

on pancreatic lipase activity. In vitro studies involving enzymatic assays, fluorescence spectroscopy, and protein-ligand binding assays enable researchers to characterize the kinetics, thermodynamics, and structure-function relationships underlying xanthophyll-lipase interactions. Through a combination of biochemical assays and biophysical techniques, scientists can evaluate the impact of xanthophylls on pancreatic lipase-mediated oil hydrolysis, substrate specificity, and lipid droplet formation. These experiments provide valuable data for understanding the physiological relevance of xanthophylls in modulating lipid digestion and absorption in the gastrointestinal tract [7,8].

Conclusion

The integration of simulation and experimentation offers a powerful approach for probing the effects of xanthophylls on pancreatic lipase-mediated oil hydrolysis. By combining computational modeling with in vitro studies, researchers can unravel the molecular mechanisms underlying xanthophyll-lipase interactions and