

over and above the needed concentration to form a stable nanoparticles. Therefore, 2.5% surfactant concentration was opted for further studies. SEM and TEM micrographs of the nanoparticles show spherical morphology and distinct surfactant coating over nanoparticles. Stability studies of SLNs is under progress.

V. CONCLUSION

Carotenoids are successfully extracted from the agrowaste i.e. mandarin peels and converted into a bioengineered product i.e. solid lipid nanoparticles. Supercritical fluid extraction was found to extract carotenoids more efficiently and also it is the solvent free method which can be scaled-up easily. Mass spectra and HPLC both suggested the presence of xanthophylls, particularly β -cryptoxanthin. Electron micrographs confirmed spherical morphology of the nanoparticles. These aqueous dispersible bioengineered nutraceuticals hold promise in the development of functional foods.

ACKNOWLEDGMENT

This work was carried out with the financial support of the Department of Science and Technology, New Delhi, India (Project no. DST/SSTP/Punjab/2012-13/12thPlan/40) and Punjab Agro Juices Ltd., Chandigarh, Punjab, India. We are also thankful to the Department of Biotechnology, Punjabi University, Patiala, Punjab, India.

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