

Phytochylomicron as a dual nanocarrier for liver cancer targeting of luteolin: In vitro appraisal and pharmacodynamics

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Abstract:

Aim: A novel luteolin (LUT) loaded dual bionanocarrier 'phytochylomicron' was elaborated to allow LUT injectable delivery and liver cancer targeting. **Methods:** LUT–phospholipid complex was prepared and loaded into chylomicron nanocarrier. Then phytochylomicron underwent physicochemical characterization, cell culture and pharmacodynamics studies on a new liver-tumor model. **Results:** Phytochylomicron showed sustained release pattern with minimum drug leakage until reaching the liver. Cell culture studies showed high growth inhibition of Hep G2 cells with 2.6-fold enhancement in cellular uptake. Pharmacodynamics demonstrated enhanced tumor growth inhibition (sixfold) with a significant tumor size reduction. Finally, cell culture results demonstrated an excellent correlation with pharmacodynamics confirming the obtained findings. **Conclusion:** A novel phytochylomicron nanosystem was successfully elaborated with promising characteristics that promoted injectable LUT delivery and liver cancer targeting. © 2018 Future Medicine Ltd

Reference:

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