|  |
| --- |
| **Vancomycin Loaded Solid Lipid Nanoparticles for Oral Bioavailability Enhancement** |
| Lewis Dymock1,2, Paul Evans2, Clare Hoskins1 |
| 1 Pure and Applied Chemistry, University of Strathclyde, Glasgow, G1 1RD, UK.  2 NextPharma, Livingston, EH53 0TH, UK. |
| **Background:** Solid lipid nanoparticles (SLNs) offer the ability to entrap and deliver drug molecules more effectively than the drug alone. By altering the composition of the SLN and the moieties present on the surface, the drug delivery capabilities can be altered to offer an increase in the bioavailability of orally delivered drugs. |
| **Methods:** Formulation of vancomycin loaded SLNs was carried out by generation of an emulsion comprised of a lipid-drug melt and an aqueous surfactant phase. Generation of the emulsion was followed by ultrasonication and cooling to form the SLNs. The SLNs are isolated by ultracentrifugation and the removed supernatant was analysed to determine residual vancomycin concentration, thus determining the encapsulation efficiency. SLNs were analysed by DLS for size and polydispersity. |
| **Results:** Characterisation of the empty carriers shows sizes ranging from 155.5 to 220nm with PDI below 0.29. |
| **Conclusions:** Current data shows a potential to increase the bioavailability of orally delivered vancomycin by utilisation of surfactants that result in advantageous moieties on the SLN surface. |