Water-soluble Polyester-based Amino Acids-modified Dendrimers loaded with Ursolic and Oleanolic Acids as promising Prodrugs suitable for Intravenous Administration

Silvana Alfei, Gaby Brice Taptue and Angela Bisio

Dipartimento di Farmacia, Università di Genova, Sezione di Chimica e Tecnologie Farmaceutiche e Alimentari
Viale Cembrano 4, I-16148, Genova, Italia
E-mail: brice@difar.unige.it

Dendrimers, are characterized by high controlled architecture, presence of inner cavities to accommodate small molecules and many peripheral functional groups and are of eminent interest for biomedical applications. The well-known pharmacological activities of Ursolic and Oleanolic acids are limited by low water solubility, non-specific cells distribution, poor bioavailability and pharmacokinetics and the research for new formulations of UA and OA is very extensive and concerns the use of carriers, such as liposomes or PAMAM. The present study describes the physical incorporation of the two triterpene acids inside amino acids-modified polyester-based dendrimers.[1] NMR, zeta potential, mean size of particles and buffer capacity of prepared materials were reported.

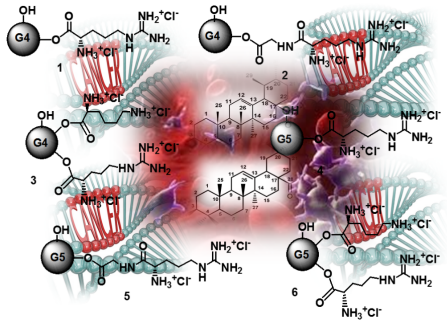

Figure 1: An eye-catching representation of the prepared complexes

The achieved water soluble complexes harmonize a polycationic character and a buffer capacity which presuppose efficient cells penetration and increased residence time with a biodegradable scaffold thus appearing as a promising team of new non-toxic prodrugs for safe intravenous administration of Ursolic and Oleanolic acids (Figure 1).

[1] S. Alfei, S. Castellaro, *Macromol. Res.*, DOI 10.1007/s13233-017-######### (in press) (2017).