

Title	Provide a title for the research project
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Curriculum	Scienze Farmaceutiche
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Project description:

Polymer conjugation is an important technique useful to improve therapeutic properties of peptides, proteins, small molecules or oligonucleotides. Polymer conjugated drugs generally exhibit prolonged half-life, higher stability, water solubility, lower immunogenicity and antigenicity and often also specific targeting to tissues or cells. The approaches of conjugation are based on chemical or enzymatic methods and this important know-how can be exploited for the preparation also of next generation Antibody-Drug Conjugates (ADCs). ADCs are a broad class of molecules obtained by coupling a potent cytotoxic agent to a monoclonal antibody (MAb), through a chemical linker. The advantage of ADCs is the selective targeting of highly effective anticancer agents towards cells expressing specific tumor antigens, which are recognized by the selected MAb. The main challenges for the development of ADCs are related to the chemistry of drug conjugation (the drug has to be released to perform its cytotoxicity), the drug payload (usually several copies of an antitumor agent have to be coupled per MAb unit), and the site of drug conjugation [(mainly involving MAb's Lys(s) or Cys(s)]. The project aims to study the development of new approach for the targeted delivery of anticancer drugs by antibody. Studies will be directed to develop complexes between a MAb and a protein delivering the drug, or a MAb and a liposome entrapping the drug.

Publications:

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 Mero A, Campisi M, Favero M, Barbera C, Secchieri C, Dayer JM, Goldring MB, Goldring SR, Pasut G. (2014). *J CONTROL REL*, 187:30-38
 Pasut G, Paolino D, Celia C, Mero A, Joseph AS, Wolfram J, Cosco D, Schiavon O, Shen H, Fresta M. (2014). *J CONTROL REL*, 199:106-113

Collaborations/Network:

- Dr. M.J. Vicent, Centro de Investigation Principe Felipe (E);
- Prof. R. Satchi-Fainaro, Sackler School of Medicine, Tel Aviv University (IL)
- Prof Silvia Muro, University of Meryland (US).

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