

Title: **Synthesis of oligonucleotides carrying reactive groups for protein conjugation.**

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Oligonucleotides are promising molecules for therapeutic uses. Recently the group has initiated collaboration with the groups of Dr. Mangués (H Sant Pau) and Antoni Villaverde (UAB) that seeks the development of drugs against metastasis, by means of administration directed to tumor cells with the chemokine receptor CXCR4, associated with metastatic tumors, for example in colorectal cancer.

The main of this project was the development of synthetic protocols aimed to produce linker molecules based on protected thiols in order to facilitate the conjugation of oligonucleotides to proteins and the production of grams amounts of oligonucleotides carrying reactive thiols.

Small oligonucleotides that carry protected thiol derivatives have been prepared and characterized. In addition, we have reacted thiol-oligonucleotides with a variety of fluorescent probes functionalized with maleimide groups. The project will continue with the study of the reaction of thiol oligonucleotides with bifunctional connectors and the production of oligonucleotide-protein conjugates.

Keywords: Oligonucleotide, drugs, thiols, conjugation, cancer, fluorescent labels