



NanomiR: MicroRNAs-based nanosystems for the detection and treatment of muscular diseases

Coordinator: Daniela Palacios, IRCCS Fondazione Santa Lucia, Rome, Italy, d.palacios@hsantalucia.it

Partners: Alvaro Somoza, Fundacion IMDEA Nanociencia, Madrid, Spain | Jean Jacques Toulmè, Université de Bordeaux, Bordeaux, France.



“functionalized gold nanoparticles to deliver in vivo therapeutic microRNAs, aptamers and drugs”

Duchenne Muscular Dystrophy (DMD) is an X-linked muscle disorder caused by mutations in the dystrophin gene, a fundamental component of the sarcoglycan complex that protects muscle fibers from damage. Dystrophic muscles are subject to continuous waves of degeneration-coupled regeneration, leading to progressive loss of muscle mass and exhaustion of the available pool of muscle stem cells, the main cells responsible for muscle regeneration.

This project will use functionalized gold nanoparticles to deliver in vivo therapeutic microRNAs, aptamers and drugs aimed at improving the function of muscle stem cells and increasing the regenerative capacity of dystrophic muscles. In addition, gold nanosensors will be developed to monitor microRNA profiles associated with different stages of disease progression in the serum of the patients.

