Professor Daniel Scherman is Exceptional Class Director of the CNRS National Scientific Research Center - France. He is Member of European Academy of Sciences EURASC. Head of Medicine and Life Sciences Division. Daniel Scherman’s scientific contribution concerns bioenergetics, neuropharmacology, gene therapy and bioimaging. Some of his results led bio-imaging agents and natural history of early Parkinson’s disease. More recent discoveries concern gene therapy and genetic vaccination, where he has pioneered physical gene delivery and the concept of biosafe “mini-plasmids” and “minicircles”. Daniel Scherman has funded the “Paris Centre of Pharmaceutical Research” at the Paris Pharmacy Faculty, and of the “Laboratory of Chemical and Biological Tools for Health” (UTCBS). Daniel Scherman has been Committee President of the European Society of Cell and Gene Therapy and President of the Pharmacology and Bio-imaging Section of the French National Center for Scientific Research (CNRS). He has been Scientific Director of the Genethon Laboratory of the Telethon/AFM French Myopathy Association and is expert for H2020 European Committees. Daniel Scherman is author of over 460 articles in reviewed journals and 50 book chapters. He is Editor of the “Handbook of Gene Therapy and Genetic Pharmacology (1st and 2nd edition).

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ABSTRACT
Because of their unique pharmacodynamics properties allowing the protection of an active therapeutic or imaging agent, its in vivo targeting and its control release, nanoparticles display huge potential for health, both for diagnostic (imaging) and treatment. RNA interference represents a promising strategy for the treatment of various disorders. Important problems remain to be resolved before clinical practice of this new type of drug, such as that of siRNA stability after injection and SiRNA penetration into target cells. Indeed, the half-life of unmodified siRNA in vivo is short due to rapid degradation by endogenous nucleases and efficient renal elimination. We will report an efficient formulation of siRNA targeting TNF-α, that was able to restore immunological balance in a mouse arthritis model following intravenous injection. This formulation is also active in an osteosarcoma mouse model and in a model of chronic Hepatitis C.

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