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Autore	M. D'Alicarnasso
Titolo	SURFACE FUNCTIONALIZED GOLD NANOPARTICLES AS ATTACHMENT INHIBITORS FOR HEPARAN SULFATE-BINDING VIRUSES [Tesi di dottorato]
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Sommario	Infectious diseases account for one fifth of global mortality. Although many efforts have been made to prevent and treat specific viral diseases (e.g. hepatitis B, AIDS) with vaccines and drugs, we still lack effective and biocompatible broad-spectrum antiviral agents, especially against re-emerging (e.g. Dengue virus) and newly emerging viruses (e.g. Ebola virus). Current advances in nanotechnology opened new frontiers in developing novel antivirals that can interact and inactivate a large number of viral pathogens. Nanoparticles (NPs) – particles in the size range 1-100 nm – can be finely engineered on their surface to interfere with key events of infections shared by many viruses, above all the attachment to the host cell. The aim of the present work is to assess the role of gold nanoparticles (Au- NPs) capped with sulfonate molecules as potential inhibitors toward human viruses binding sulfated polysaccharides on the cell membrane. Results showed that sulfonated NPs have powerful antiviral as well as virucidal activity. Their applications may lead to substantial improvements in virus-spread control not only as novel wide-spectrum therapeutic agents but most importantly as novel active materials to be employed in emergency situations, for example in personal protective equipment, waste management,

	virus containment.
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