DRUG DELIIVERY AND DIAGNOSIS USING POLYMERS, PHOSPHOLIPIDS AND NANOPARTICLES

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Controlled drug delivery occurs when a polymer, whether naturai or synthetic, is judisiously combined with a drug or other active agent in such a way that the active agent in such a way that the active agent is released from the material in a predesigned manner. In any case, the purpose behind controlling the drug delivery is to achieve more effective thérapies white eliminating the potentiel for both under - and overdosing. A range of materials has been employed to controi the release of drugs and other active agents.

In this communication we will mention two major technique in drug delivery: Liposomes drug delivery and hydrogel drug delîvery. Liposomes are made of a billayer and look much like blood ceils. Some of these liposomes are made of some chicari phospholipide that undergo a melting transition. When polymerized, these liposomes can undergo a crumpling transition and releasing its content. The second class of material widely used in drug delivery is polymeric hydrogels Thèse hydrogels are made of a three dîmensional polymer matrix, which responding to an external stimuli, would shrink and swell. During this swelling/shrinking this cycles, the content of the polyemeric gel is released of sucked inside. Finally, we will talk about how we can use the conjonction between the nanoparticles from Prof. Nayfeh's group and hydrogels in cancer diangnostics, We develop in the lab a hydrogel patch embedded with nanoparticles that will be applied on the skin and will serve as a skin cancer symptom (angiogenesis) indicator.