SALUTE E BENESSERE:
UN VIAGGIO TRA PASSATO,
PRESENTE E FUTURO.

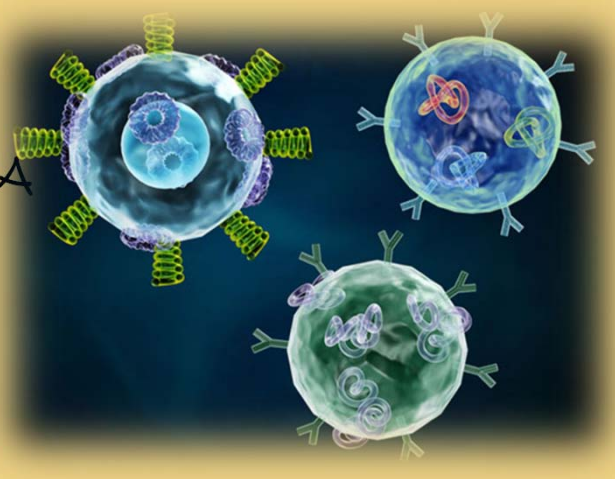
23 maggio 2024
Come ci curiamo oggi:
PIGLIATE 'NA PASTIGLIA!

L'EVOLUZIONE TECNOLOGICA DEL MEDICINALE

Elisabetta Esposito

Università degli Studi di Ferrara

DOCENTE DI TECNOLOGIA FARMACEUTICA
DIPARTIMENTO DI SCIENZE CHIMICHE,
FARMACEUTICHE E AGRARIE



Finanziato dall'Unione europea
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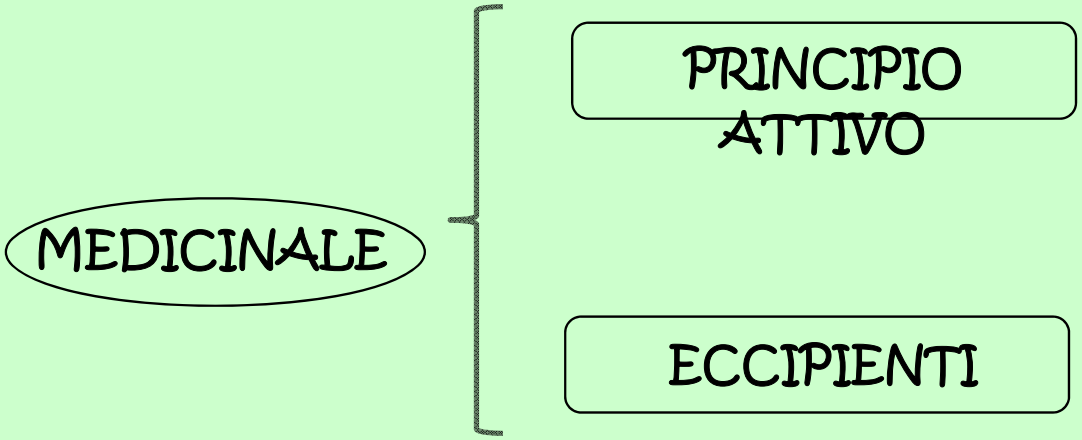
MEDICINALE

- Ogni sostanza o combinazione di sostanze presentata come avente proprietà curative o profilattiche delle malattie umane

- Ogni sostanza o associazione di sostanze che possa essere utilizzata sull'uomo o somministrata all'uomo allo scopo di ripristinare, correggere o modificare funzioni fisiologiche, esercitando un'azione farmacologica, immunologica o metabolica, ovvero di stabilire una diagnosi medica.

Agenzia Italiana del Farmaco



-AUMENTANO il volume

-PROTEGGONO il principio attivo dagli agenti esterni (caldo, freddo, umidità o altre sostanze chimiche)

-STABILIZZANO IL MEDICINALE

-FACILITANO L'ASSORBIMENTO del principio attivo nell'organismo

-RENDENO IL SAPORE DEI MEDICINALI PIÙ GRADEVOLE

-CONTRIBUISCONO A CONFERIRE LA FORMA AL MEDICINALE

TECNOLOGIA FARMACEUTICA

La scienza di preparare e presentare i medicinali attraverso una determinata forma farmaceutica, assicurando all'utilizzatore **efficacia, sicurezza e qualità**

(industria o farmacia).

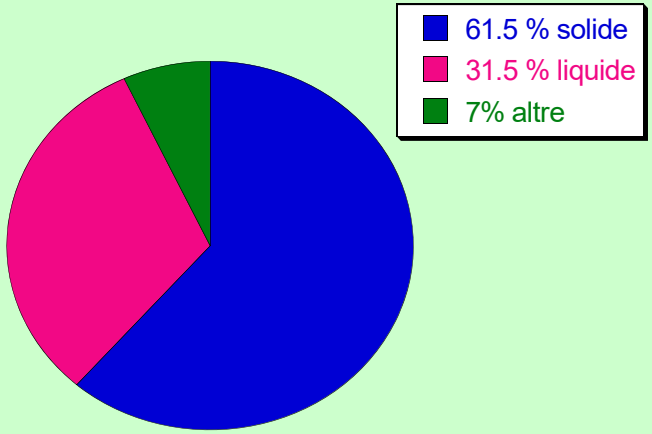
FORME FARMACEUTICHE

FORME FARMACEUTICHE

- FORME FARMACEUTICHE **SOLIDE** (COMPRESSE, CAPSULE, POLVERI) 61.5%

- FORME FARMACEUTICHE **LIQUIDE** (INIETTABILI, ORALI, OFTALMICI, ECC). 31.5%

- ALTRE FORME (POMATE, GEL, SPRAY) 7%



COMPRESSE

Preparazioni solide, contenenti ciascuna dosi singole di una o più sostanze attive, preparate per compressione di volumi uguali di particelle o granuli.

CAPSULE

Preparazioni solide, costituite da un involucro di consistenza dura o molle di forma e capacità diverse, contenente una dose di medicamento che, generalmente, viene somministrata in una sola volta.
Gli involucri, anch'essi chiamati capsule sono generalmente a base di gelatina.

A seconda della composizione dell'involucro esterno

Capsule dure (OPERCOLI)
Involucro riempito
dopo la produzione

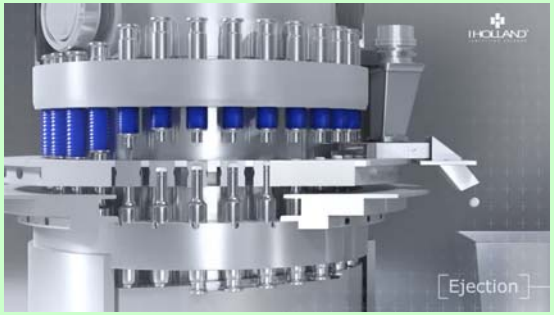
Capsule molli
Produzione e
riempimento contestuali

COMPRESSE

Principio attivo + eccipienti

Preparazione: Macchine comprimitrici

1 milione di compresse /ora

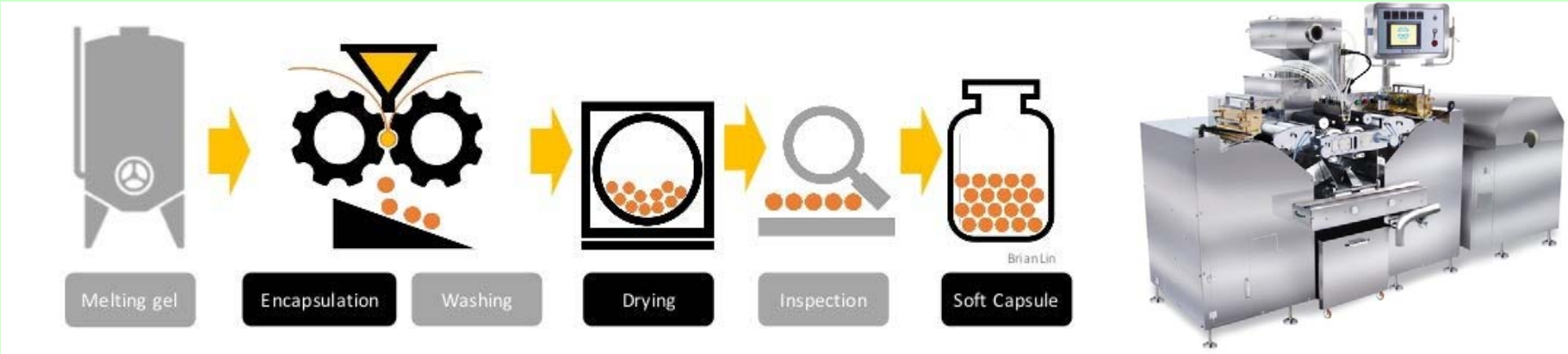


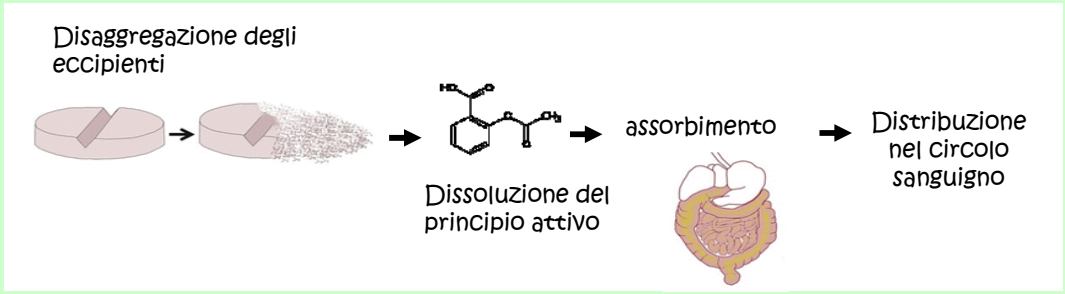
CAPSULE RIGIDE

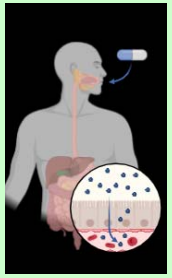
- Preparazione capsule vuote
- Apertura
- Riempimento Principio attivo + eccipienti
- Chiusura capsule piene

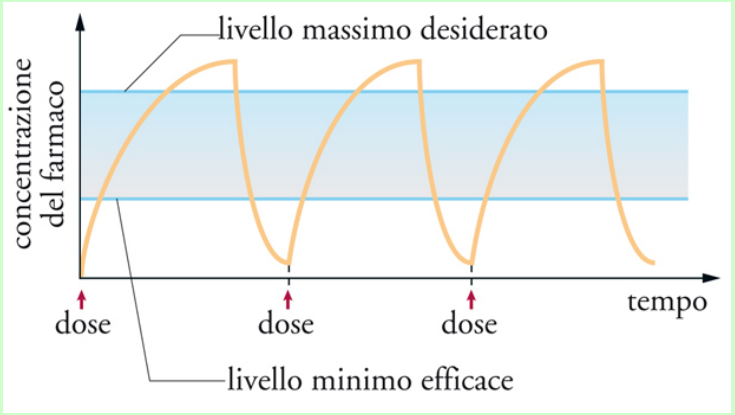
CAPSULE MOLLI

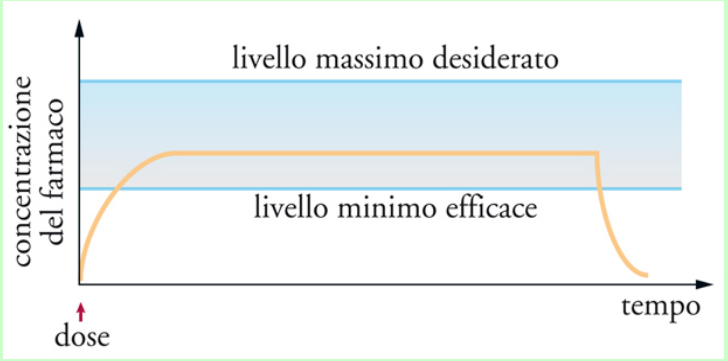
-Preparazione capsule e riempimento contestuali



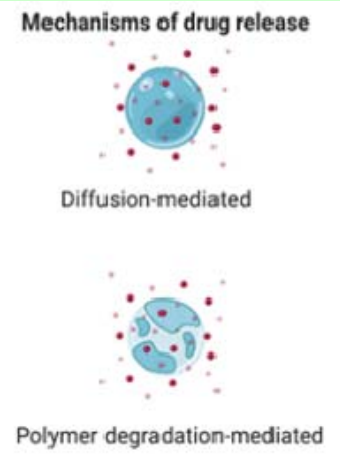

Disaggregazione degli eccipienti
Dissoluzione del principio attivo
assorbimento
Distribuzione nel circolo sanguigno



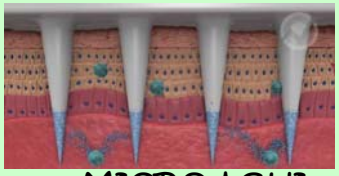

livello massimo desiderato
concentrazione del farmaco
dose
dose
dose
tempo
livello minimo efficace


livello massimo desiderato
concentrazione del farmaco
livello minimo efficace
dose
tempo

FORME FARMACEUTICHE INNOVATIVE

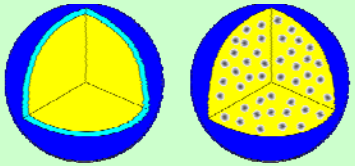


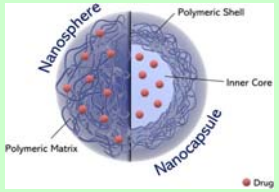
CEROTTI TRANSDERMICI



MICROAGHI

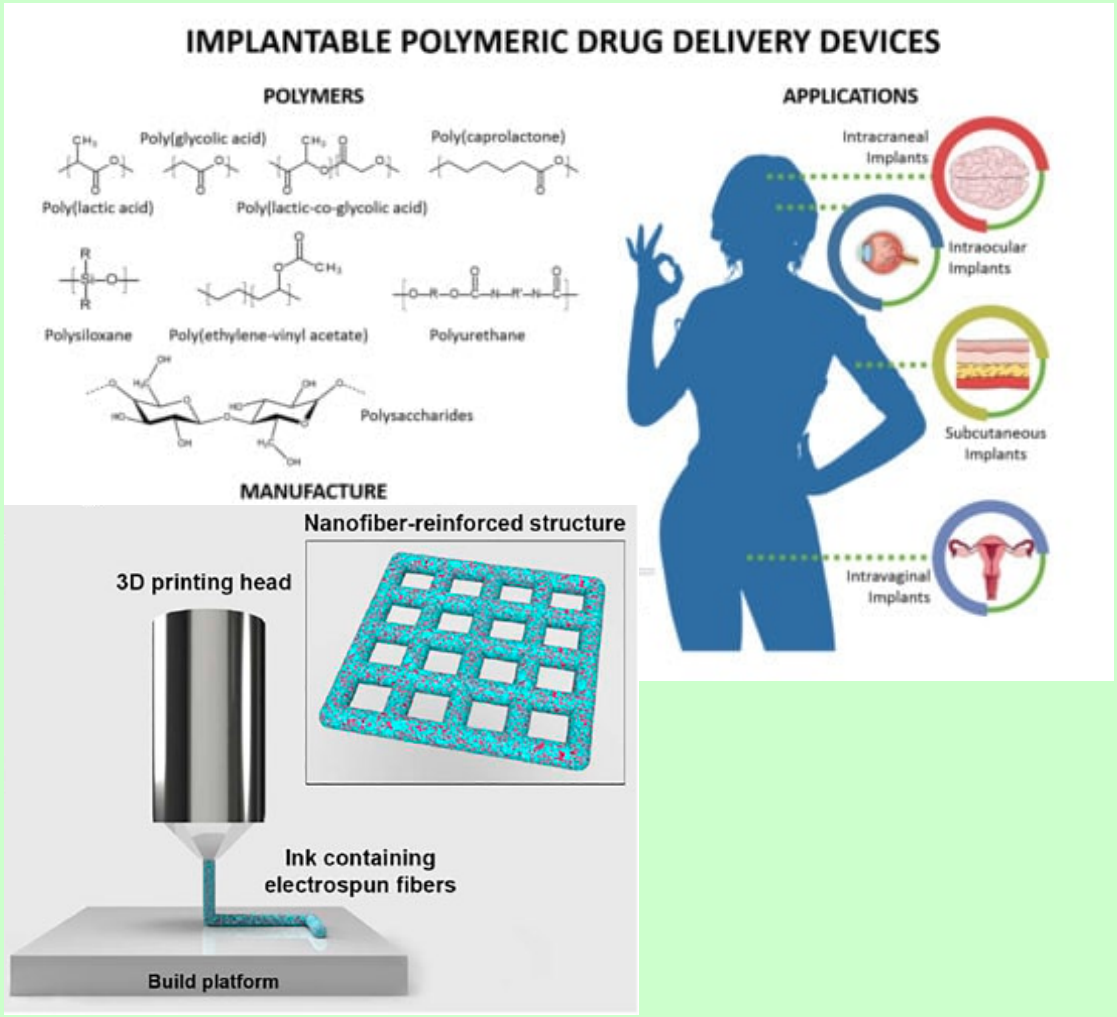
MICROPARTICELLE

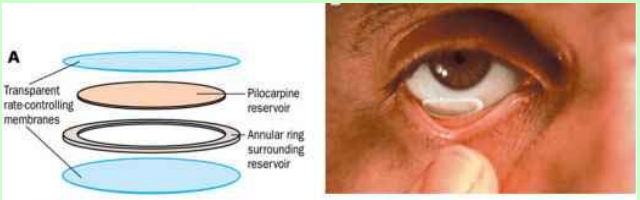


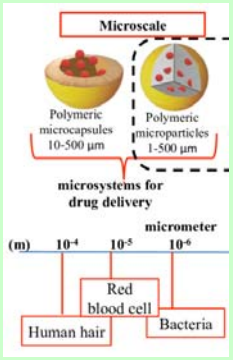


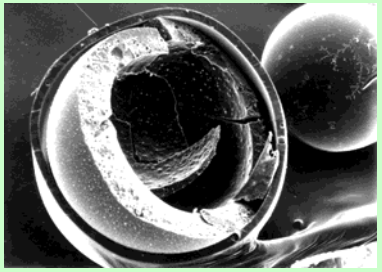
NANOPARTICELLE

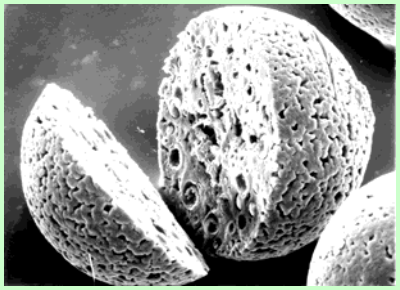
IMPIANTI


IMPLANTABLE POLYMERIC DRUG DELIVERY DEVICES
POLYMERS
Poly(glycolic acid)
Poly(caprolactone)
Poly(lactic acid)
Poly(lactic-co-glycolic acid)
Polysiloxane
Poly(ethylene-vinyl acetate)
Polyurethane
Polysaccharides
APPLICATIONS
Intracraneal Implants
Intraocular Implants
Subcutaneous Implants
Intravaginal Implants
MANUFACTURE
Nanofiber-reinforced structure
3D printing head
Ink containing electrospun fibers
Build platform

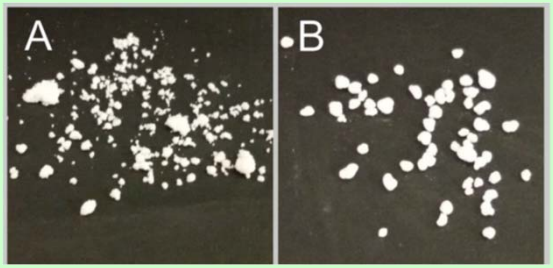

A
Transparent rate-controlling membranes
Pilocarpine reservoir
Annular ring surrounding reservoir



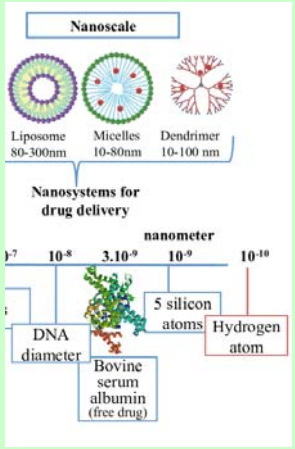


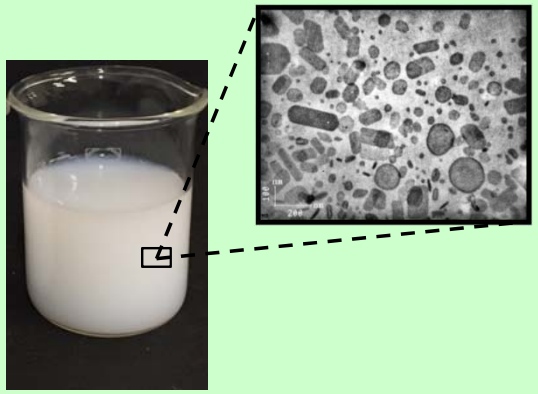


MICROPARTICELLE stato solido



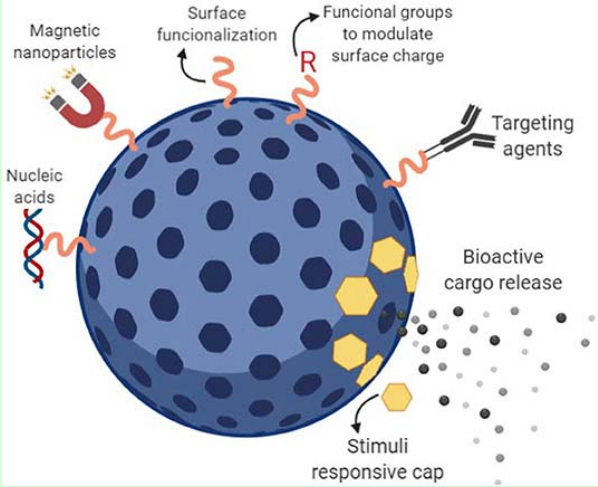
NANOPARTICELLE stato liquido (dispersioni)

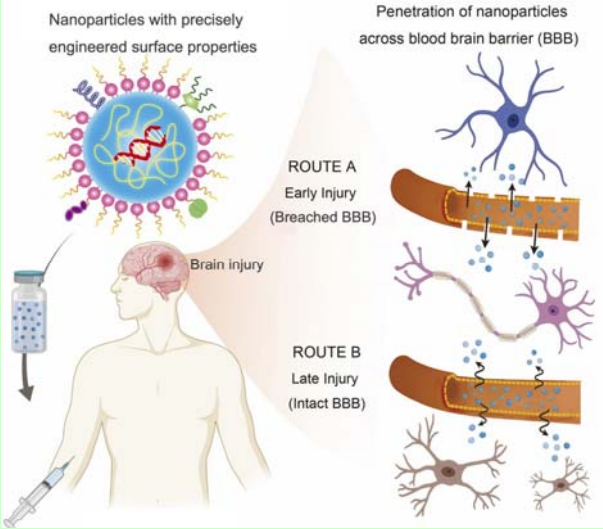


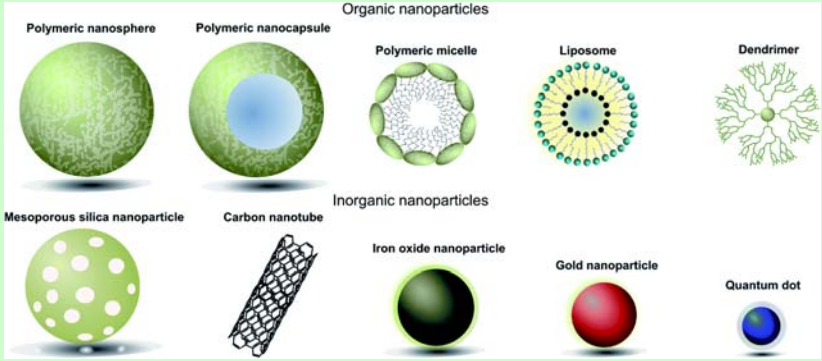


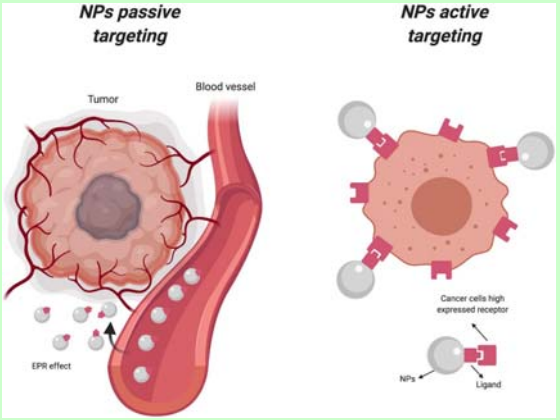
stato solido

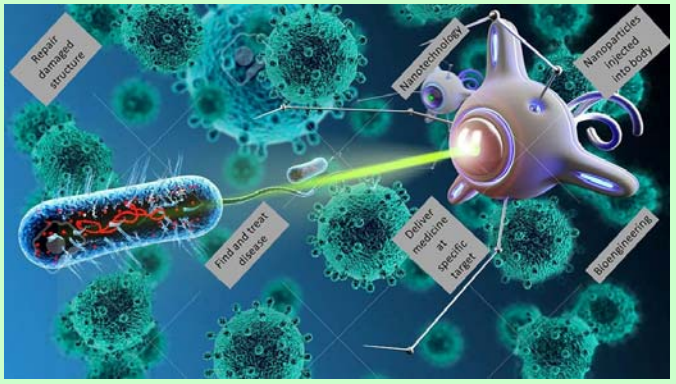
NANOPARTICELLE



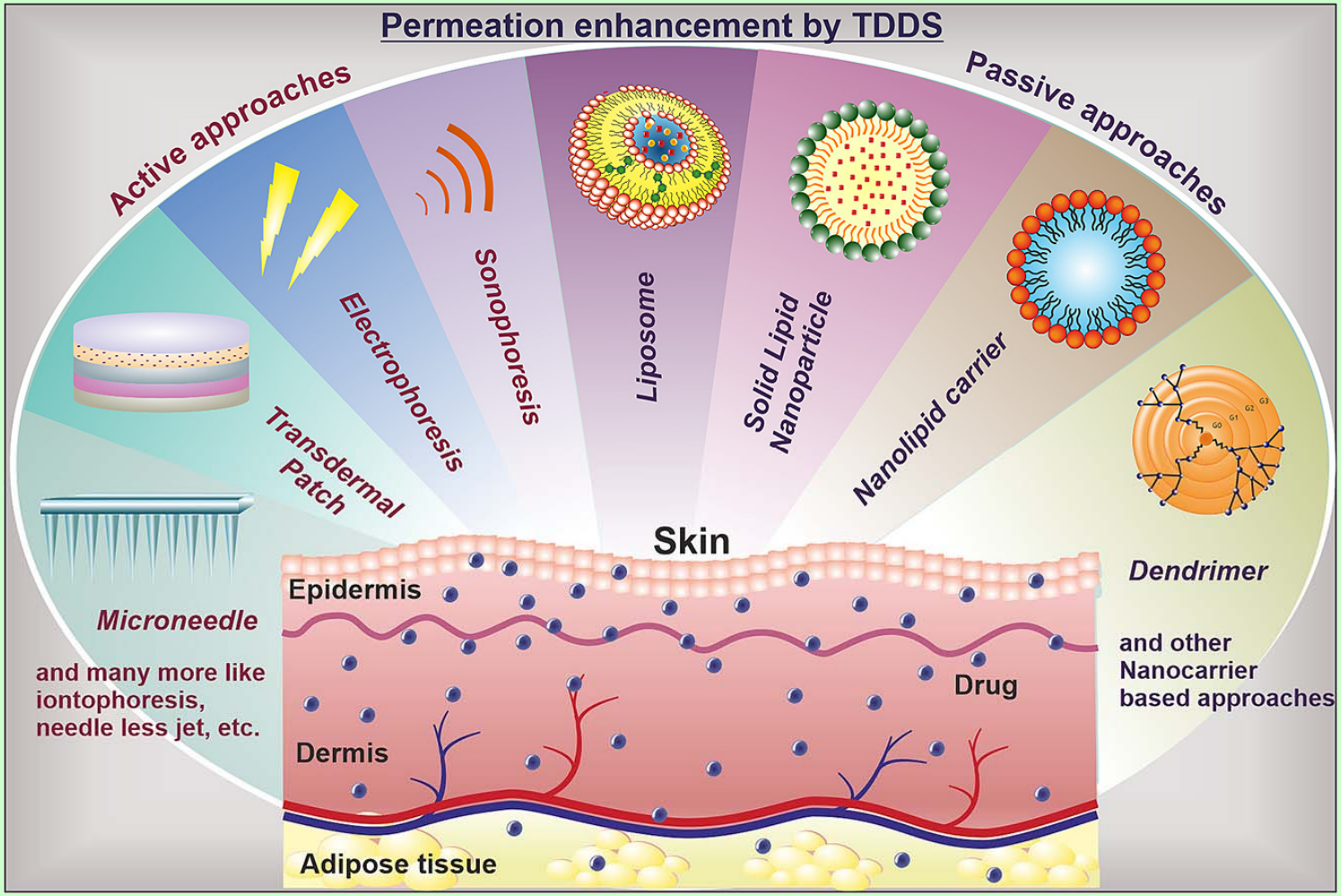




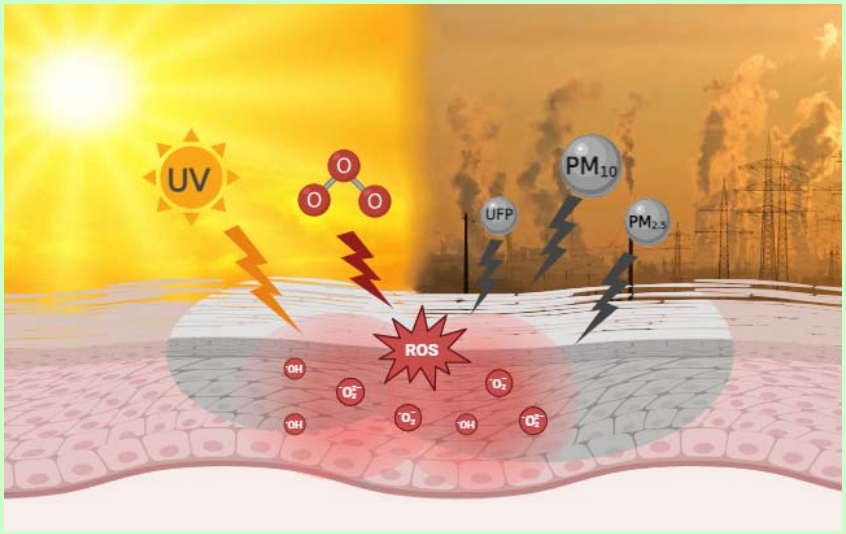




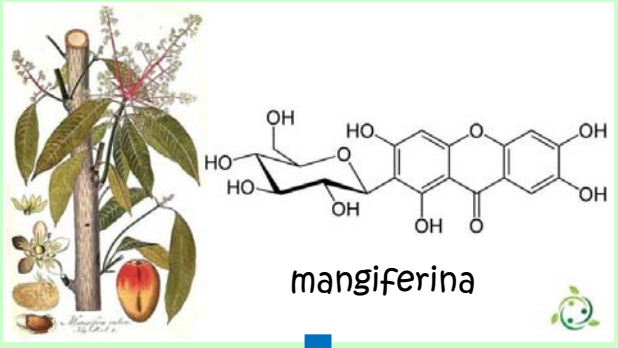
Somministrazione cutanea



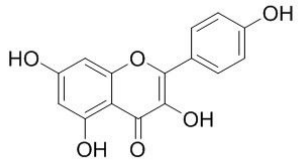
Ricerca Unife

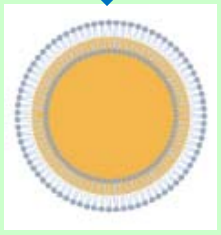


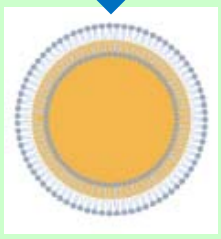
- Invecchiamento cutaneo
- psoriasi
- dermatiti
- melanoma

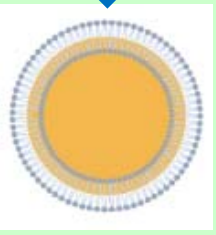


kaempferolo









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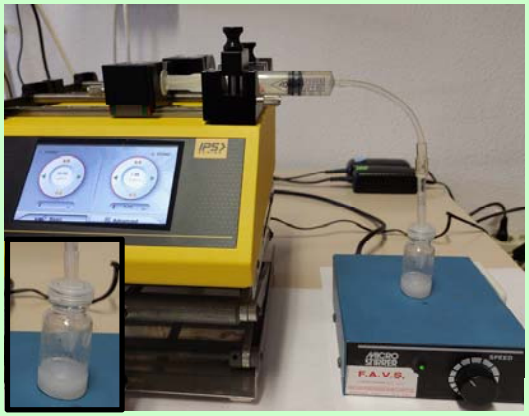
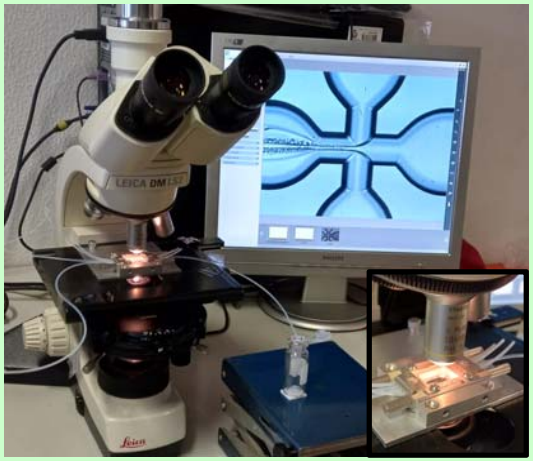
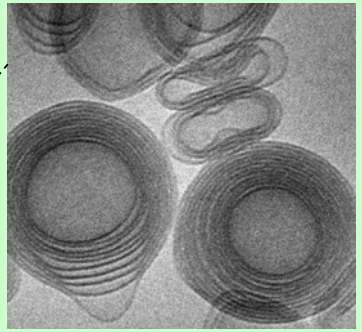
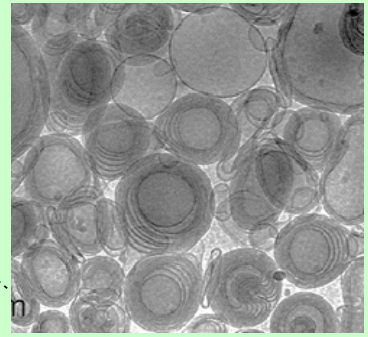


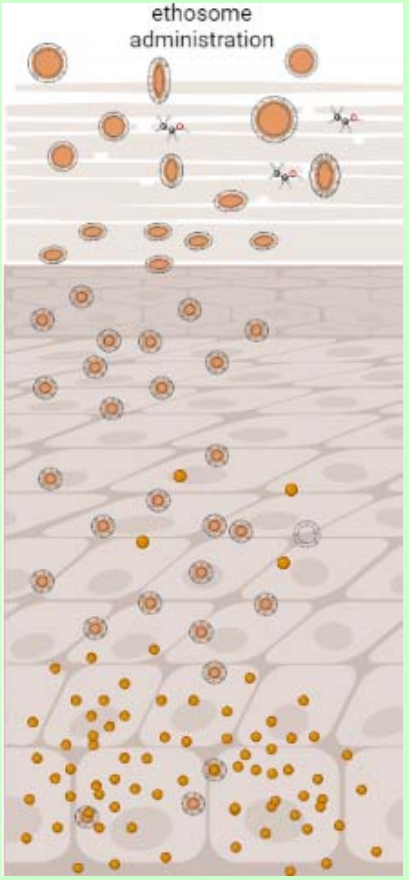
b

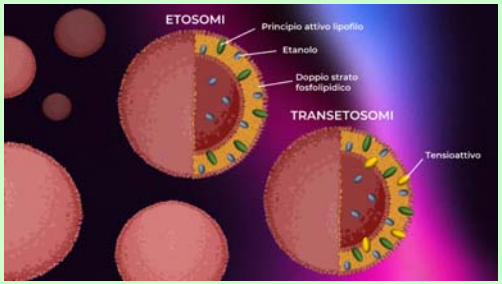


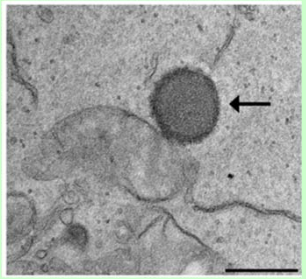
NANOVESCICOLE

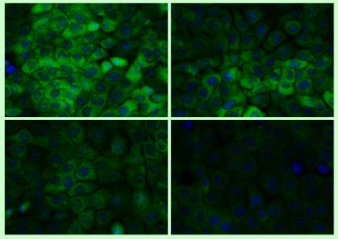












EVOLUZIONE DEL MEDICINALE → FITOFARMACI NANOTECNOLOGICI

Grazie per l'attenzione!

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