



NANOMEDICINE R&D AT BAY-NANO

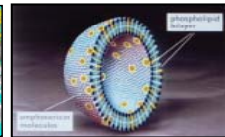
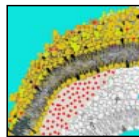
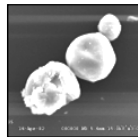
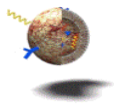
NANOMEDICINES: DRUGS AND OTHER MEDICINAL PRODUCTS CREATED WITH NANOTECHNOLOGY

UNIQUE FEATURES

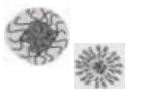
Increased therapeutic efficacy due to:

- Targeted (therapeutic site-directed) action
- Extended absorption/circulation time
- Decreased side effects

Liposomes



Micelles



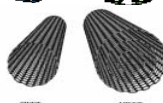
Fullerenes



Dendrimers



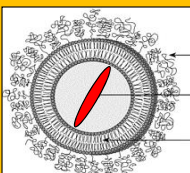
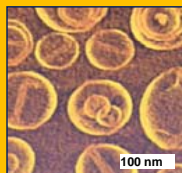
Carbon nanotubes



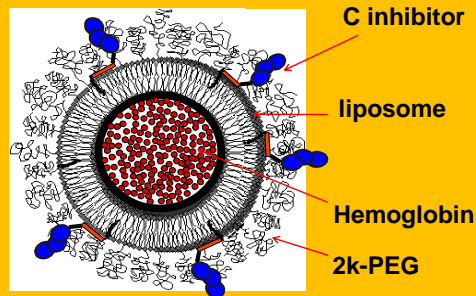
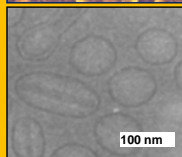
Products developed at Bay-Nano

- Generic liposomal doxorubicin (Doxil) against cancer
- Liposomes against inflammation and drug hypersensitivity
- Oxygen carrier liposomes (stealth hemosome) as a universal blood substitute

Doxil



2000-PEG
doxorubicin
liposome



Stealth liposome-encapsulated Hb

NANOMEDICINE CONSORTIUM



Bay Zoltan
Foundation for
Applied Research,
Institute of
Nanotechnology



Semmelweis
University
Faculty of
Medicine



Gedeon Richter
Ltd.

•cGMP batches for
preclinical and
clinical testing

•Analytical
validation

• Bioequivalence
studies
• In vitro
physicochemical
characterization
• ADME in animals
• Human tests

•Scale up
•Manufacture
•Marketing

Collaborator/partners

Russia:

Institute of Biomedical Chemistry /Russian Academy of Sciences
Central Research Institute of Epidemiology, Dept Immunology and Biotechnology

EU:

Ubichem Ltd.
Cambridge University

USA:

Walter Reed Army Institute of Research
Horvath Laboratory of Bioseparation Sciences, LLC
Uniformed Services University of the Health Sciences

Hungary:

Seroscience Ltd