



Bioorganic Synthesis Of Cerium Oxide Nanoparticles as Drug Delivery System In Improving The Anticancer Effects of Free Trastuzumab in Treating Breast Cancer

Dr. Gusliani Eka Putri, M.Si

Assistant Professor in Medical Laboratory Technology, Sekolah Tinggi Ilmu Kesehatan Syedza Saintika, Padang 25132, Indonesia

**email : guslianiekaputri@gmail.com
(+6285263640977)**

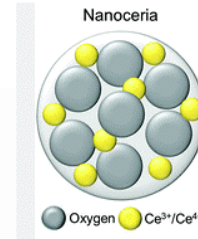


Health Research Schema

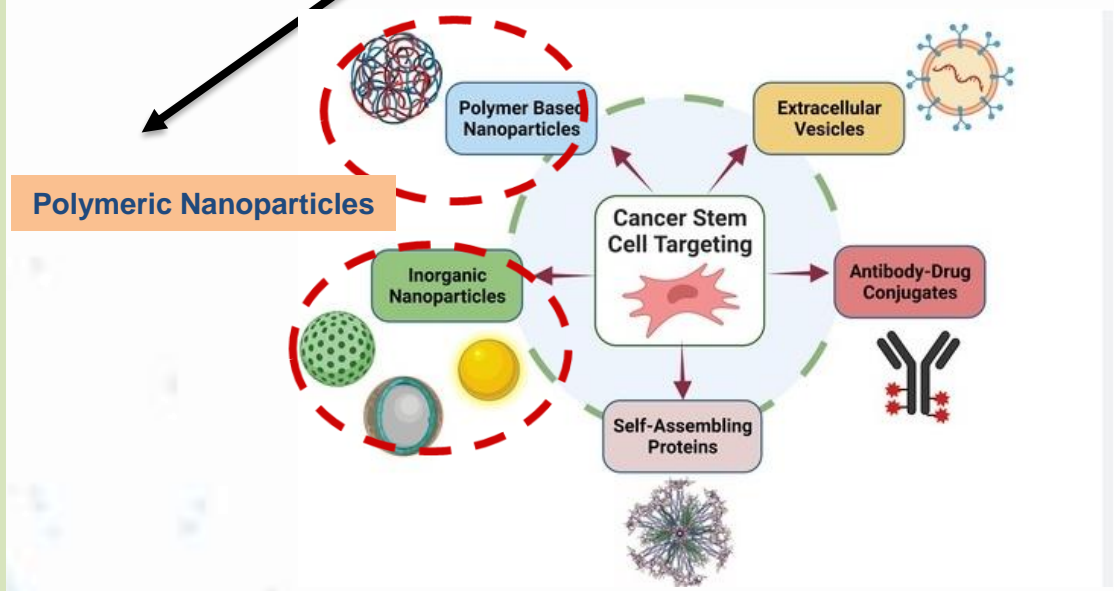
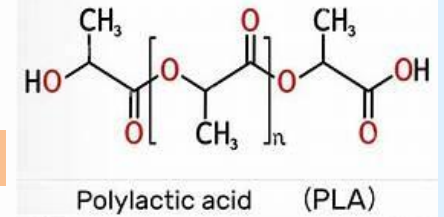
In the case of Chronic Disease (Breast Cancer)



- ❑ Breast cancer (BC) stands as the most prevalent malignancy among women globally.
- ❑ Presently, established cancer therapies for BC typically involve surgical interventions followed by either chemotherapy or radiotherapy.
- ❑ However, the efficacy of both chemotherapy and radiotherapy in treating BC is often hindered by the adverse effects on normal tissues and organs.
- ❑ In recent years, the exploration and synthesis of various nanoparticles (NPs)
- ❑ Consequently, NPs-mediated targeted drug delivery systems (DDS) have emerged as a promising technique for BC treatment.
- ❑ Cerium Oxide Nanoparticles (CeO₂NPs), in particular, exhibit unique properties that make them attractive for cancer treatment

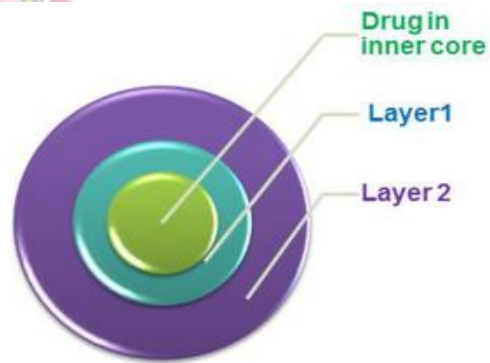


Modification





Research Plan Scheme



Charge determination
• Zetasizer
• laser doppler anemometry

Surface analysis
• SEM, TEM, AFM, DSC, XRD, sorptometer

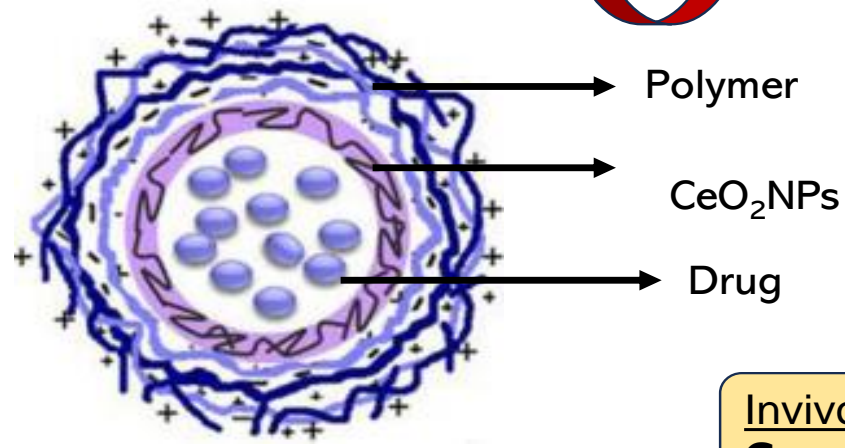
Particle size and size distribution
• AFM, SEM, TEM, Laser defractometer, mercury porosimeter

Release profile
• Uv/vis spectroscopy and other spectroscopy techniques



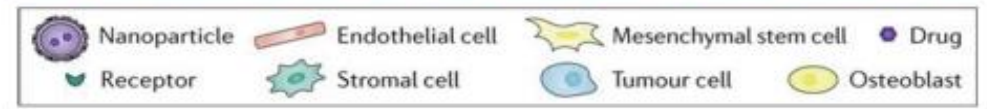
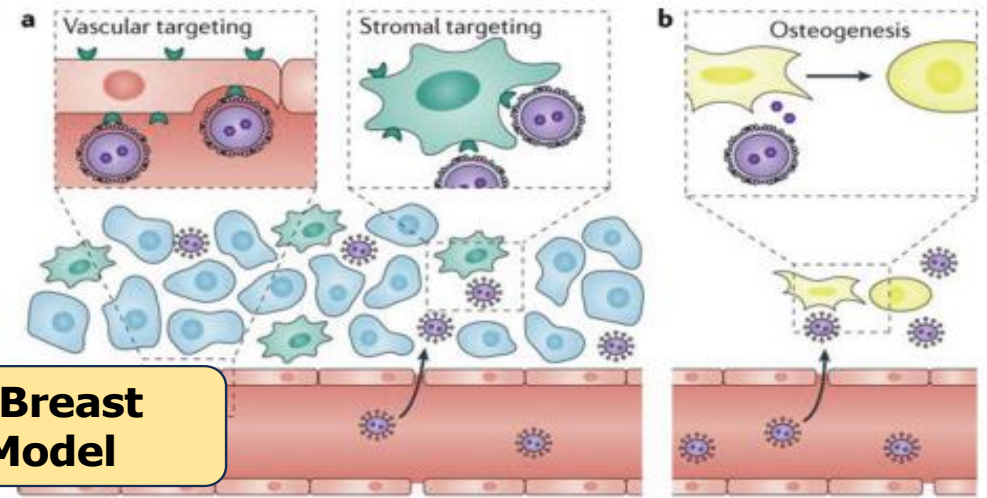
- Antibacterial Activity
- Antioxidant
- Drug release and Drug Loading

Cytotoxicity Studies (MTT Assay)



Polymeric nanoparticle

Invivo : Treating Breast Cancer in Mice Model





Terima kasih