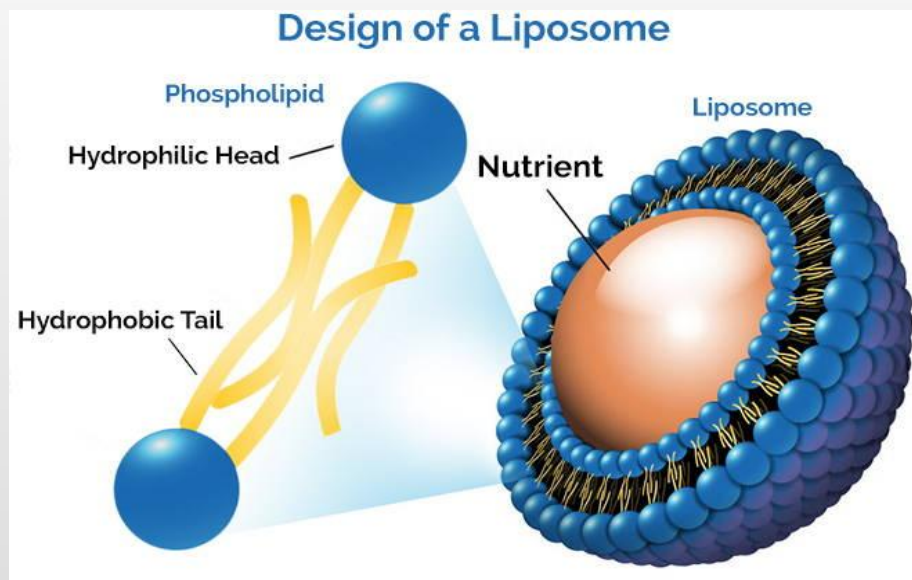
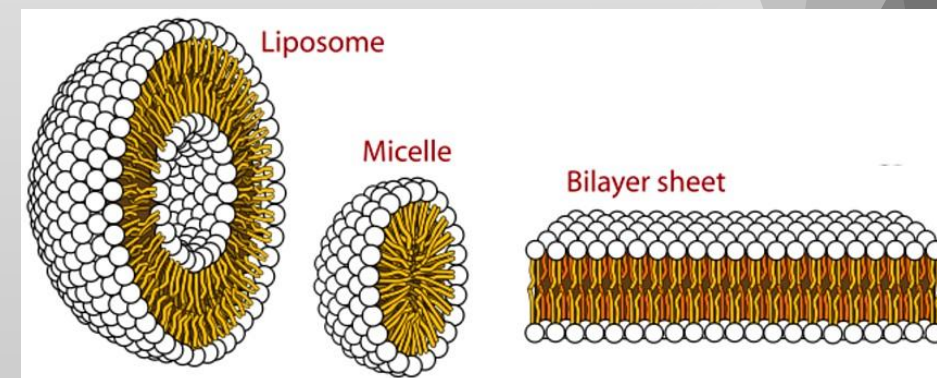
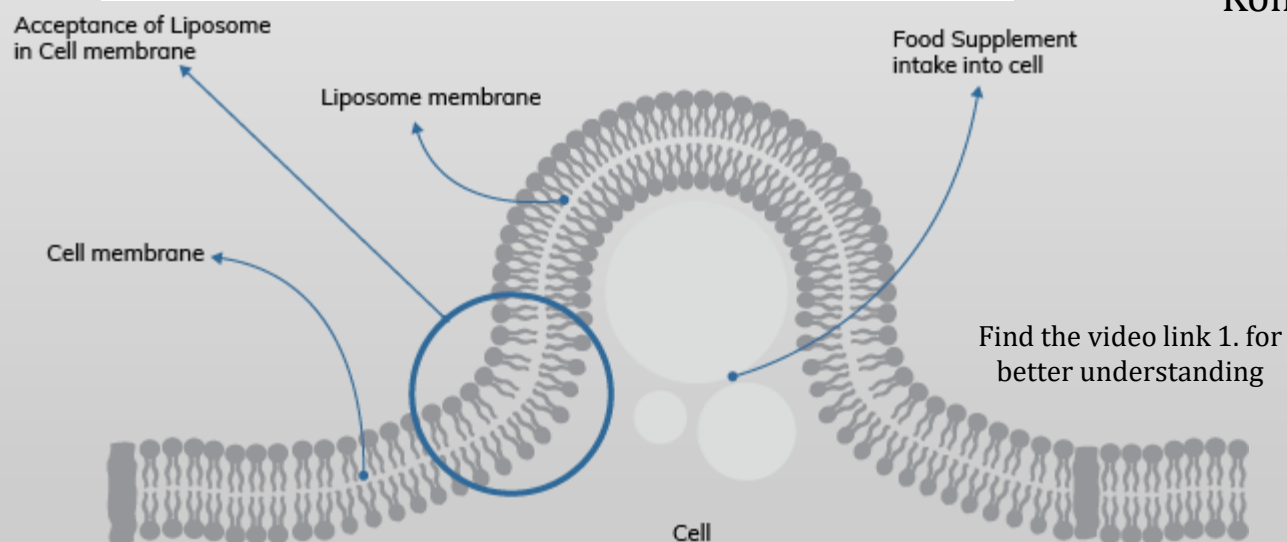


Enhancing Delivery and Absorption of Active Ingredients



- A liposome is a tiny spherical vesicle made from phospholipids, which are similar to the cell membranes in your body.
- The phospholipid bilayer allows liposomes to encapsulate and carry both hydrophilic (water-soluble) and hydrophobic (fat-soluble) substances.
- Protects sensitive ingredients from degradation (like stomach acids or oxidation).
- Through its branded, indigenous “**Lipokon**” technology Konark offers various ingredients in its Liposomal form



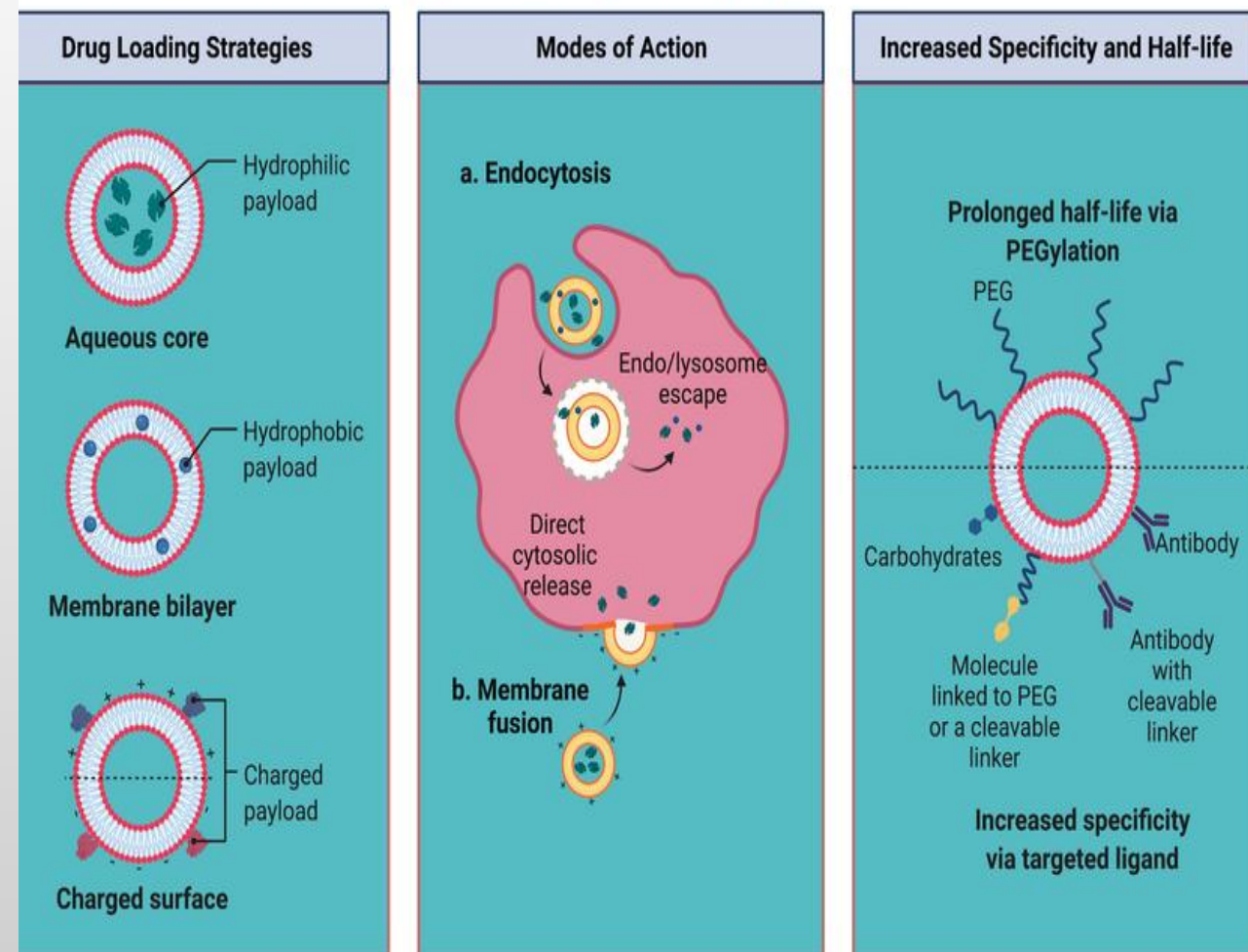
❖ How Lipokon Technology Works ?

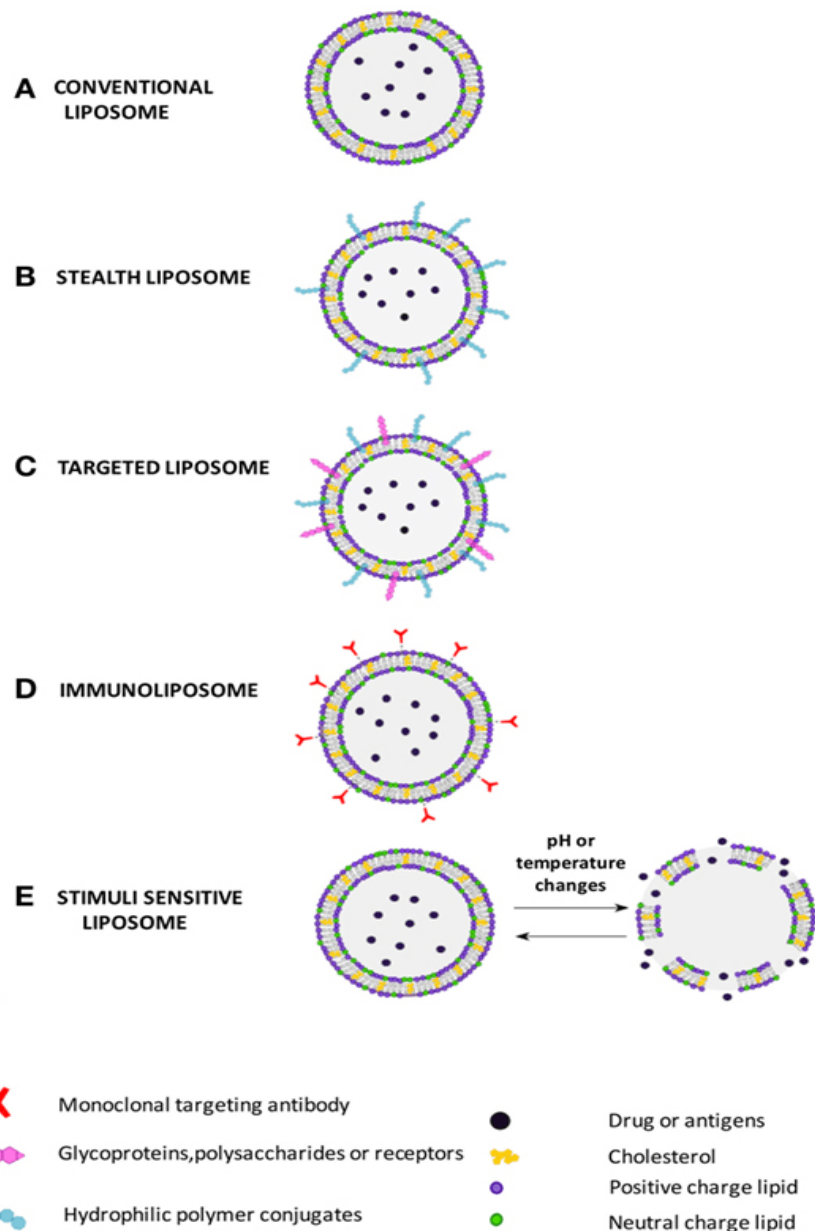
- **Encapsulation of Active Ingredients:**
Liposomes “carry” active ingredients inside their bilayer structure.
Protects ingredients from digestive enzymes or oxidation.
- **Improved Absorption:**
When consumed or applied to the skin, liposomes merge with cell membranes and deliver the encapsulated ingredients directly into the body or skin cells.
- **Controlled Release:**
The liposome can release its contents over time for sustained effects

PLEASE FIND A VIDEO LINK TO
LIPOSOMAL DRUG DELIVERY SYSTEM

1. <https://youtube.com/shorts/a9rHoni5eY0?feature=shared>
2. <https://youtu.be/Jfj5qYwcqAY?si=sDJGXs4YQrEG0LjZ>

Liposomal drug delivery systems





Feature	Liposomal Products	Non-Liposomal Products
Structure	Encapsulated in liposomes (phospholipid bilayers)	Free, unencapsulated, or in simple forms (pills, creams)
Absorption & Bioavailability	Higher, enhanced by liposome fusion with cell membranes	Lower, often degraded or poorly absorbed
Stability	Higher, protects ingredients from degradation	Lower, prone to degradation (oxidation, stomach acids)
Targeted Delivery	Yes, can target specific cells or tissues	No, general absorption through the body or skin
Side Effects	Lower, due to controlled delivery and smaller doses	Higher, due to larger doses and less effective absorption

❖ Benefits of Lipokon

- **Increased Bioavailability:**

Liposomal products often have higher absorption rates compared to traditional forms of supplements (like tablets or powders).

- **Better Protection of Sensitive Ingredients:**

Vitamins and antioxidants are protected from degradation.

- **Targeted Delivery:**

Liposomes can target specific areas of the body or skin, enhancing effectiveness.

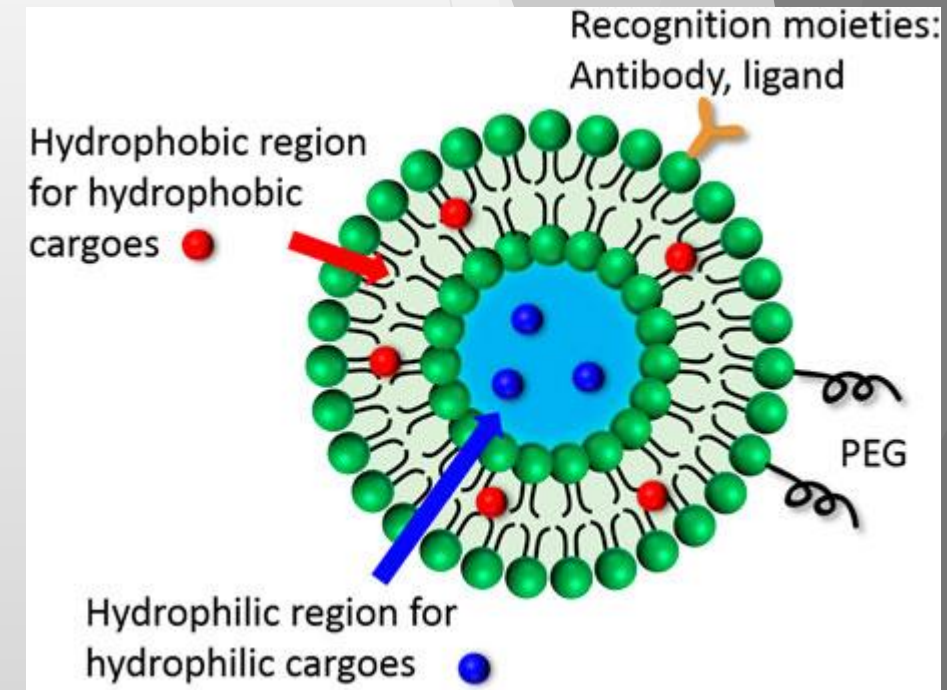
- **Reduced Side Effects:**

Better absorption can reduce the chances of digestive discomfort common with traditional supplements.

- **Lipokon technology offers a breakthrough in enhancing the delivery and absorption of active ingredients.**

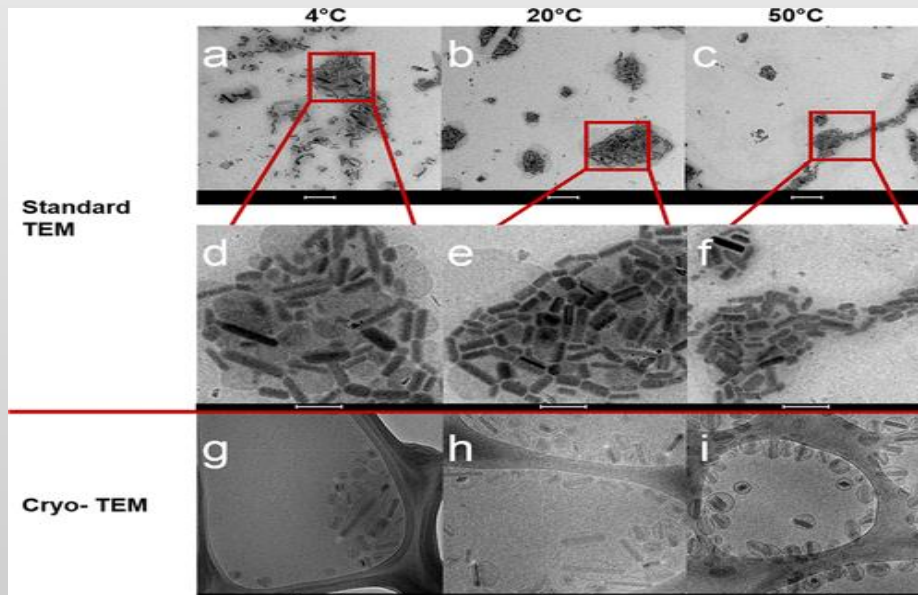
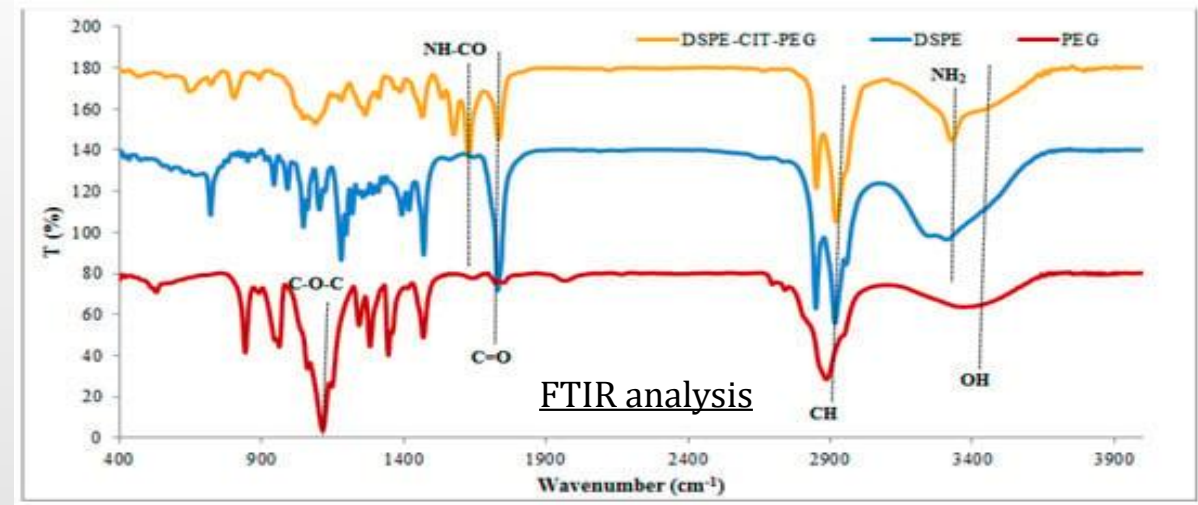
- Its applications span from supplements to skincare and pharmaceuticals.

- **Lipokon can provide more effective, targeted, and bioavailable nutrients or active compounds.**

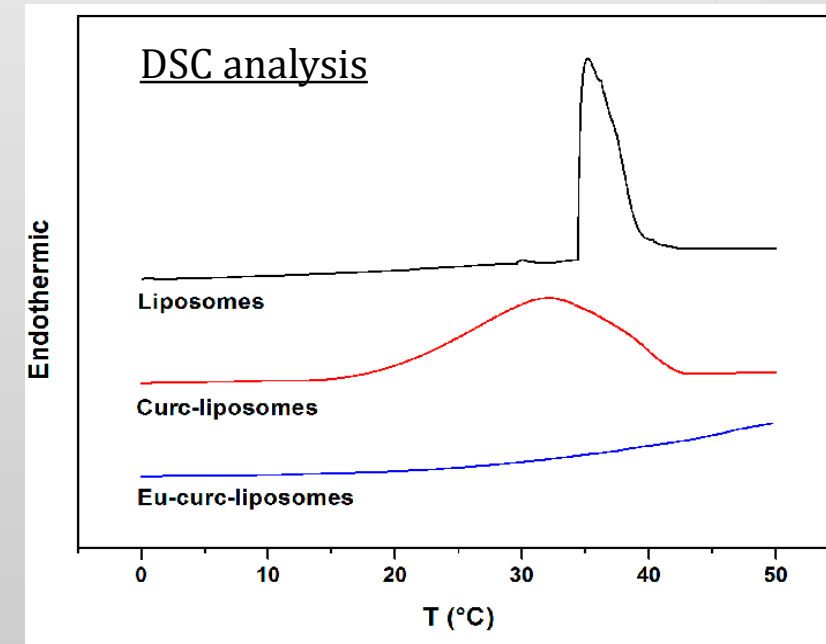


❖ Analysis

- Particle Size Analysis
- Zeta Potential Measurement
- Transmission Electron Microscopy (TEM)
- Cryo-TEM
- Fourier-Transform Infrared Spectroscopy (FTIR)
- Differential Scanning Calorimetry (DSC)
- In Vivo Bioavailability Testing
- Skin Penetration and Permeability (for Topical Liposomes)
- Microbiological Testing (for Liposomal Probiotics)



Standard TEM and Cryo-TEM analysis



❖ Recent studies on liposomal technology

- **Study:** Recent studies have explored the use of liposomal formulations in delivering chemotherapeutic drugs directly to cancer cells, minimizing damage to healthy cells. One notable study, published in *Journal of Controlled Release* (2024), investigated the use of **liposomal paclitaxel** in combination with other therapies for enhanced targeting and reduced side effects.

Findings: The liposomal form showed improved drug stability, targeted delivery to tumor tissues, and increased cytotoxicity against cancer cells compared to traditional free drug formulations.

- **Study:** Research published in *Pharmaceutical Research* (2023) looked into the effects of **liposomal curcumin** on inflammation and oxidative stress.

Findings: Liposomal curcumin achieved greater bioavailability compared to non-liposomal curcumin. The study showed promising results in reducing markers of inflammation and oxidative damage in both animal models and human trials, making it a potent option for treating chronic inflammatory diseases.

Recent studies show that **liposomal technology** continues to be an exciting and effective tool in various fields, including drug delivery, nutrition, skincare, and probiotics. The key advantages—such as improved bioavailability, enhanced stability, targeted delivery, and sustained release—are being leveraged for both therapeutic and cosmetic purposes.

Certifications

