Liposomal Delivery

In order to make the liposome, “active agents” must be used. These active agents are usually not listed on an ingredient label and can be chemicals such as sodium cholate, Span 60, Tween 60, and Tween 80. Below is research related to the subject. In the following study it states, “charged liposomes can electrostatically interact with bacterial cells and, in some cases, induce bacterial cell death.”

Structurally Related Liposomes Containing N-Oxide Surfactants: Physicochemical Properties and Evaluation of Antimicrobial Activity in Combination with Therapeutically Available Antibiotics | Molecular Pharmaceutics (acs.org)

There is very little safety data on liposomes, and the issue of liposome stability is still being researched. See below:

Advances and challenges in liposome digestion: Surface interaction, biological fate, and GIT modeling - ScienceDirect

Drug Leakage from Liposomes - Stability of Drugs - Drug Times

The Role of Cryoprotective Agents in Liposome Stabilization and Preservation - PMC (nih.gov)

Liposomes: structure, composition, types, and clinical applications - PMC (nih.gov)

Liposomes are a class of nanoparticles, and in general, there are safety concerns with nanoparticles. According to this study, the safest liposome is using polyethylene glycol:

Safe Nanoparticles: Are We There Yet? - PMC (nih.gov)

Biotics has a unique emulsification process that uses natural emulsifying agents, which reduce fat soluble nutrients to the same size as those found in nature (i.e. the same size as a lipid particle found in oily foods.) What you get is lymphatic uptake just as with these natural foods. This process is not easy to mimic, so many companies have to rely on synthetic systems for nutrient delivery.