



## Description

MCW inventors have developed a novel technology that enables non-invasive, local drug delivery across the Tympanic Membrane to treat Otitis Media. The technology consists of uniquely designed cationic DOTAP liposomes as carriers to transport antibiotics and/or steroid therapies directly to the site of Otitis Media infection.

## Problem Solved

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Figure: (A-C) Validation of trans-tympanic membrane diffusion. 200 $\mu$ L drug-loaded liposome suspension was applied to the external auditory canal of excised chinchilla auditory bullae. Middle ear was sampled at various timepoints for Ciprofloxacin HCL (A), Ceftriaxone (CFX) (B), Dexamethasone (C). Equivalent free-drug was applied as control. (D) Antibacterial activity. CFX-loaded liposomes maintained their antibacterial activity to equivalent free drug, when tested on NTHi bacterial cultures. Blank DOTAP liposomes exhibited dose dependent antibacterial efficacy.



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