

pH-sensitive niosomes and liposomes: Effects on inflammation and pain in murine models

Paola Minosi, National Center for Drug Research and Evaluation, Istituto Superiore di Sanità,

In several diseases and disorders, acute and chronic inflammation is often associated with pain. Several researchers have focused on alternative drug delivery systems to overcome the difficulties associated with the distribution and effectiveness of analgesic and anti-inflammatory drugs. One of the strategies adopted to overcome these limitations, was the use of specific pH-sensitive niosomes and liposomes as an effective delivery system for analgesic and anti-inflammatory drugs. These vehicles showed an increased stability when pH tissue is reduced during inflammatory pathologic conditions. In *in vivo* murine models of nociception and inflammation, pH-sensitive niosomes loaded with Ibuprofen and Lidocaine demonstrated the efficiency of this drug delivery system as compared to the free active principle, therefore confirming the interest of the pH-sensitive nanocarrier formulations.