

암세포 유래 엑소좀 분비 억제를 통한 항암제 개발

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Inhibitors of the secretion of cancer exosomes, which promote cancer progression and metastasis, can not only accelerate exosome biology research but also offer therapeutic benefits for cancer patients. We identified a drug which inhibits exosome secretion from breast cancer cells through interference with a GPCR. A drug, an FDA-approved oral antibiotic, showed significant anti-tumor and anti-metastatic effects in mouse models of breast cancer xenografts, reduced the expression of proteins involved in exosome biogenesis and secretion, and triggered co-localization of multivesicular endosomes (MVEs) with lysosomes for degradation. The GPCR, as a target of this inhibitory effect, was determined in gain- and loss-of-function studies of the GPCR protein through pharmacological and genetic approaches. These findings provide a foundation for exosome-targeted cancer therapies and the mechanistic studies on exosome biology.