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MFG-E8 Inhibits Aβ-Induced Microglial Production of Cathelicidin-Related Antimicrobialpeptide: A Suitable Target against Alzheimer's Disease

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Neuroinflammation plays a pivotal role in the incidence and progression of Alzheimer's disease (AD). Cathelicidin-related antimicrobial peptide (CRAMP) is critically involved in the innate neuronal responses of chronicneuroinflammation in the AD and thus plays a key role in the disease. Here, we show that Aβ42 induced microglialproduction of CRAMP, which was effectively inhibited by milk-fat globule-epidermal growth factor 8 (MFG-E8). Production of CRAMP was associated with activation of ERK1/2, p38, and phospho-P65-NF-kB upregulation.Additionally, the phosphorylation of these signaling proteins was also reversed by MFG-E8. Pre-incubationwith signaling inhibitors confirmed that MFG-E8 has a regulatory role on CRAMP through MAPK and NF-kBsignaling pathways. MFG-E8 treatment may thus be a potential pharmacotherapy for chronic inflammation in the AD.