

IV-O-5.7

CGRP PRIMERS THE FORMATION OF SUPEROXIDE ANION IN HUMAN NEUTROPHILS

Eun Mi Hong, Byung Soo Choi, Jee Young Kim, Jongho Lee
Dept of Pharmacol, Coll of Med, Hallym Univ, Chuncheon

Abstract

Calcitonin gene-related peptide (CGRP) is a 37 amino acid neuropeptide involved in vasodilation and other biological functions. It has been proposed to contribute to inflammation. We investigated the role of CGRP in priming the formation of superoxide anion($O_2^{\cdot-}$) by human neutrophils with isoluminol assay and by luminescence microplate reader using cell impermeable substrate. The formation of superoxide anion by CGRP was increased at a concentration of 10^{-6} M CGRP. In addition, CGRP enhanced FMLP-stimulated $O_2^{\cdot-}$ production by neutrophils at a CGRP concentration of 10^{-6} M. Neutrophils preincubated with solvent or CGRP and then stimulated with 10^{-7} M FMLP. This priming effect of CGRP was rapid in onset (< 5 min) and was maximal in 20 min and lasted more than 1 hour. These data provide evidence that CGRP regulates a number of neutrophil functions and affects the immune response.