Solid-phase synthesis of an A-B loop mimetic of the Cε3 domain of human IgE: Macrocyclization by Sonogashira coupling

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Abstract

The solid-phase synthesis of a cyclic peptide containing the 21-residue epitope found in the A-B loop of the Cε3 domain of human immunoglobulin E has been carried out. The key macrocyclization step to form the 65-membered ring is achieved in ∼15% yield via an "on-resin" Sonogashira coupling reaction which concomitantly installs a diphenylacetylene amino acid conformational constraint within the loop.

Indexed keywords

Engineering controlled terms: Amino acids; Conformations; Synthesis (chemical)

Engineering uncontrolled terms: Cyclic peptides

Engineering main heading: Polypeptides

EMTREE drug terms: acetylene derivative; benzene derivative; immunoglobulin E; macrocyclic compound

EMTREE medical terms: article; chemical analysis; chemical reaction; chemical structure; conformation; cyclization; protein domain; synthesis

MeSH: Amino Acid Sequence; Catalysis; Cyclization; Humans; Immunoglobulin E; Immunoglobulin epsilon-Chains; Indicators and Reagents; Models, Molecular; Molecular Mimicry; Nuclear Magnetic Resonance, Biomolecular; Peptides, Cyclic; Spectrometry, Mass, Matrix-Assisted Laser Desorption-Ionization; Stereoisomerism; Structure-Activity Relationship

Medline is the source for the MeSH terms of this document.