[PA1-77] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Molecular interaction of Gα16 subunit G protein with chemoattractant receptors

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It has been proposed that G protein interacts with receptor via multiple interaction sites. With regard to this, C-terminus of the Gα subunit is clearly not the only structural determinant on the G proteins that is critical for receptor coupling selectivity, but the extreme N-terminus of Gα subunit and other structural elements were proposed to be responsible for dictating the interaction with receptors. Interactions of chemoattractant factor C5a, fMLP receptors and chemokine interleukin-8 receptor with Gα16 could play an important role in chemotaxis, which lead to an inflammatory responses when stimulated with each of the corresponding ligands, respectively. Molecular interaction of chemoattractant receptors and Gα16 was chosen in order to provide the basis for the elucidation of the interaction of chemoattractant receptors with Gα16 subunit, thereby contribute to find novel targets for designing new type of G protein antagonists with anti-inflammatory effects that can inhibit the specific interaction of chemoattractant receptors with Gα16. Experiments were performed in order to characterize certain domains of Gα
16 subunit responsible for efficient coupling to chemoattractant receptors. For this, a series of chimeric Gα11/Gα16 and Gα16/Gα11 cDNA constructs were expressed and then, the ability of chimeric proteins to mediate C5a, IL-8, and fMLP-induced release of inositol phosphate in transfected Cos-7 cells was tested. The results show that a segment encompassing from amino acid residue174 to residue 209 of Gα16 contributes for efficient coupling to the C5a receptor. However, a stretch of amino acid residues 220-240 of Gα16 that is necessary for interacting with C5a receptor does not play a role in the interaction with IL-8 receptor. Instead, a stretch from residue 155 to residue 195 of Gα16 is considered crucial for efficient coupling to IL-8 receptor in concert with C-terminal 30 amino acid residues of this a subunit. In addition, a coupling profile of a variety of chimeras composed of Gα11 and Gα16 to fMLP receptor indicates that the C-terminal 30 amino acids are most critical for the coupling of Gα16 to fMLP receptor.

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Comparison of TPN use with hospital admixtured and industrial manufactured formular TPN in Seoul national university

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There have been many changes in hospital pharmacy after division of medical practice and dispensing. Many pharmacist leave hospital pharmacy to drugstore. Because reduced number of pharmacist, many of hospital pharmacies are placed in difficulty.
Restructuring of hospital pharmacy made us consider substitution hospital admixtured TPN(total parenteral nutrition) with industrial manufactured TPN. But we have no data established to support that, so we have carried out the comparison of two kinds of TPN formulary.
We have divided into two groups receiving hospital admixtured TPN and industrial manufactured TPN patients in august, 2002. We have compared with each groups in nutritional related dose, parameters and complication before and after TPN administration and also investigated the reason of formulary change in each groups.
We expect that this study will be good data for selection TPN formulary and substitution hospital admixtured TPN with industrial manufactured TPN.