IgG fusion 단백질을 사용한 ligand-receptor의 상호작용에 관한 연구

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Chimeric fusion proteins involving IgG have proven valuable in studying protein-protein interactions and may possess therapeutic applications as well. For example, three receptor subtypes for the natriuretic peptides, when fused to the Fc portion of human IgG γ chain, were quantitatively and qualitatively indistinguishable from the native receptor, thus allowing detailed structure-function studies of the receptor. In an attempt to block human immunodeficiency virus infectivity with soluble derivatives of CD4, a CD4/IgG Fc chimeric molecule was shown to increase the plasma half life of soluble CD4 and possessed the added advantage of IgG Fc-mediated placental transfer. In the case of the KGFR, this approach provided a framework for dissection of its ligand binding domains and made it possible to demonstrate that high affinity binding sites for two ligands, aFGF and KGF, reside within different receptor Ig-like domains. Chimeric molecules fused to immunoglobulins would have the advantages of secretion from transfected cells as well as detection and purification from medium utilizing *Staphylococcus aureus* Protein A. In addition, where highly related receptors make their discrimination very hard due to the difficulties in generating specific immunochemical probes, IgG fusion protein with tailor-made specificities confers particular advantages to elucidate patterns of receptor distribution and expression. The approach described here may have general applications in defining ligand-receptor interactions as well as searching for specific agonists and antagonists of receptor function.