CR3 AND CR4 DIFFERENTLY MEDIATE THE ADHERENCE TO FIBRINOGEN OF HUMAN DENDRITIC CELLS

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CR3 and CR4 are members of the family of β2 integrins, both expressed by human monocytes, neutrophil granulocytes (PMN), macrophages and dendritic cells. They consist of a common β-chain (CD18) and a unique α chain (CD11b in CR3 and CD11c in CR4). Their similarity is very high regarding their extracellular domain; 87% respectively. This is why ligand specificity of CR3 and CR4 is very much overlapping, and their main ligands – such as iC3b, fibrinogen, ICAM-1 – are the same. They differ however, in their intracellular domain, which suggests fundamental differences between the two receptors. So far however, very little is known about the function of CD11c.
We recently demonstrated that CD11b dominates iC3b mediated phagocytosis over CD11c, the latter having only a supportive role in this process. In our present work we analyzed the role of CD11b/CD18 and CD11c/CD18 in another important cellular function of β2 integrins, namely adherence to fibrinogen, a common ligand of both receptors. Fibrinogen is an acute phase protein present on inflamed endothelium as well as a component of the extracellular matrix. We studied the adhesion of primary human monocytes and monocyte-derived dendritic cells and macrophages to this protein in the presence or absence of blocking antibodies binding to CD11b or CD11c. Interestingly we found that in contrast to phagocytosis, adherence is mainly mediated through CD11c ligation. These results provide further evidence that CD11b/CD18 and CD11c/CD18 have different roles despite their structural similarites.