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Mini Review

Mechanism of ligand to trigger immune response

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Abstract

It deals with how the Ligands interact and activate the Natural Killer cells and other T cell to act and cause release of cytokines and also discuss the mechanism of action.

Keywords: Cytokines; Flowcytometery; Interleukin -8; Immunofluroscence; Immunophotometery

Introduction

Immune cell surface consist of the receptors which consist of the ligand binding receptor to which ligand bind and trigger the [1] compliment pathway and trigger the immune response and cytokine response and release of cytokines in the body and trigger the immune response [2].

Experiment

- Aim: To study the ligand effect on the Nk cells
- Methodology: Flow cytometery is setup on the basis of the ligand concentration to study it
- Material: Flow cytometer, NK cells, Interleukin, ligands
- Lab: Serum sample report from the biochemistry lab of Delhi nursing home from the Bahadurgarh Observations

Study of the ligand response through experimentation study.

It demonstrates the ligand concentration increases the response of the Natural Killer cells increasing and the graph and as the [3] concentration of ligand increases graph goes upward exponentially and also in Figure mechanism of the ligand attachment to receptor is shown and through flow cytometery the action is shown [4].

This Figure shows effect of ligand on four receptors that is A) SIRPß In this as ligand concentration increases graph move towards the saturation b) Siglec14 in this there is a direct exponential phase and the saturation phase no lag phase c) NKp44 in this the phase goes normally with lag phase exponential and saturation phase [5]. d) TREM1 in this phase there is a long lag phase in which during starting there is no effect and as there is rise there is short log phase in which there is less effect and as there is increase in concentration there is sudden increase and switch over to exponential phase [6].

This is shows the conjugation versus IL8 graph and shows in which there is increase in the conjugation and multiple increase in the tetra long in all the cells and we see the exponential increase in the IL8 cells in the concentration and lead to the increased IL8 and also there is a saturation phase [7].

Result

Ligand stimulate the Natural Killer cells and stimulate the release of IL8.

Construction methods

CD80 anchor (short). METDTLLLWVLLLWVPGSTGD YPY [8] DVPDYATGGSAHIVMVDAYKPTKGGSGGS HVSEDFT

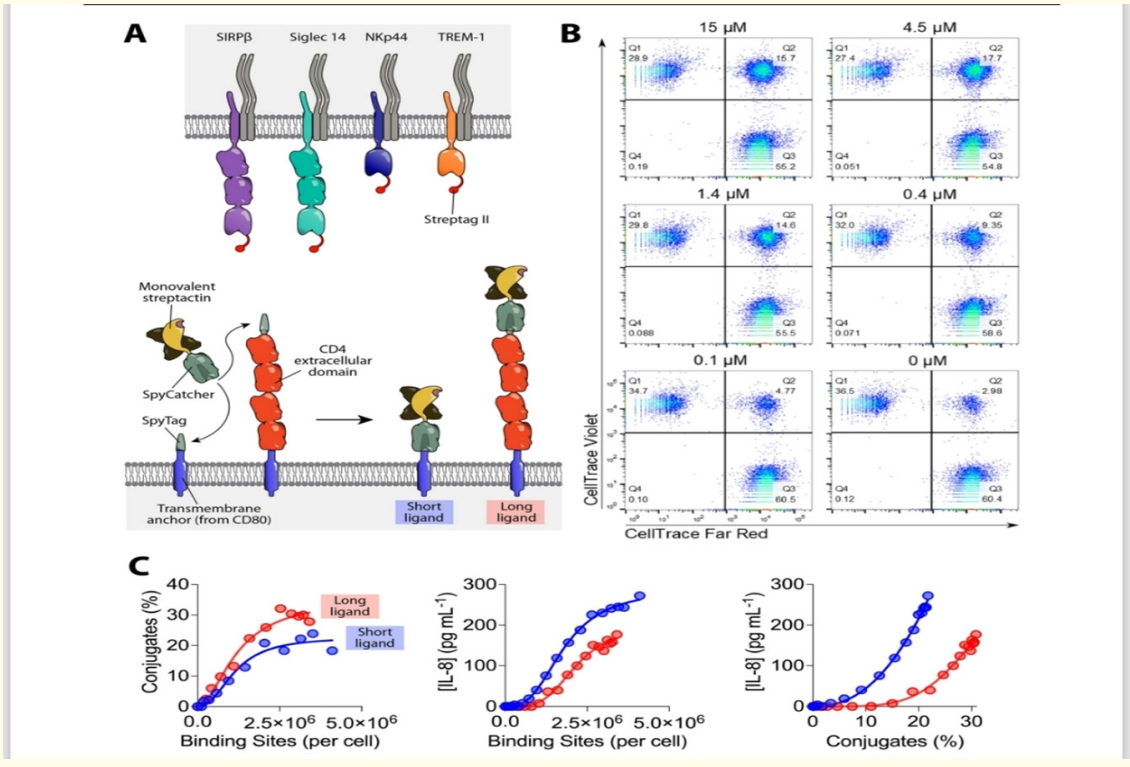

Figure 1

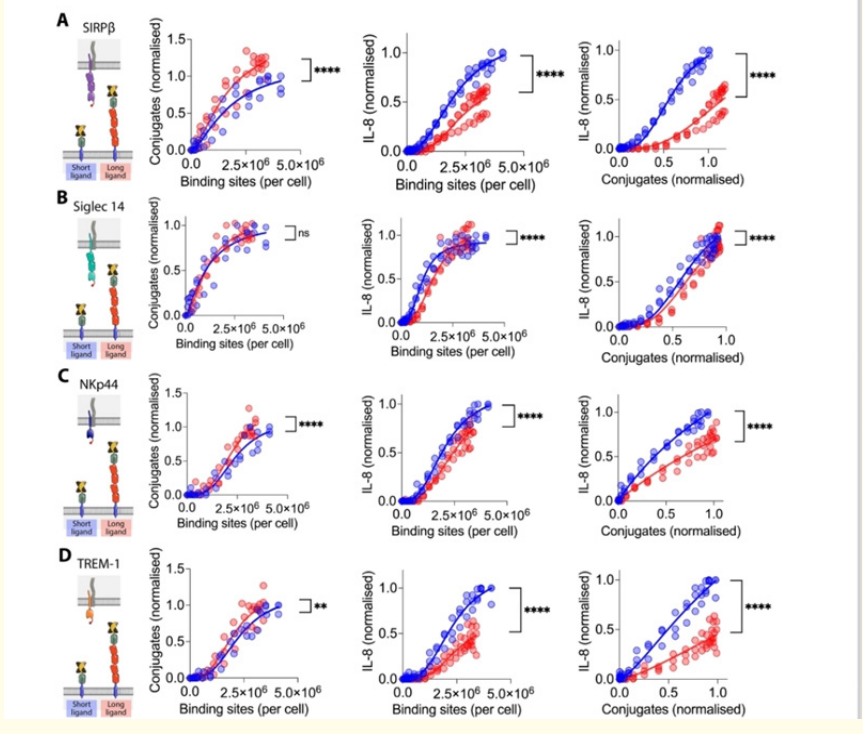

Figure 2

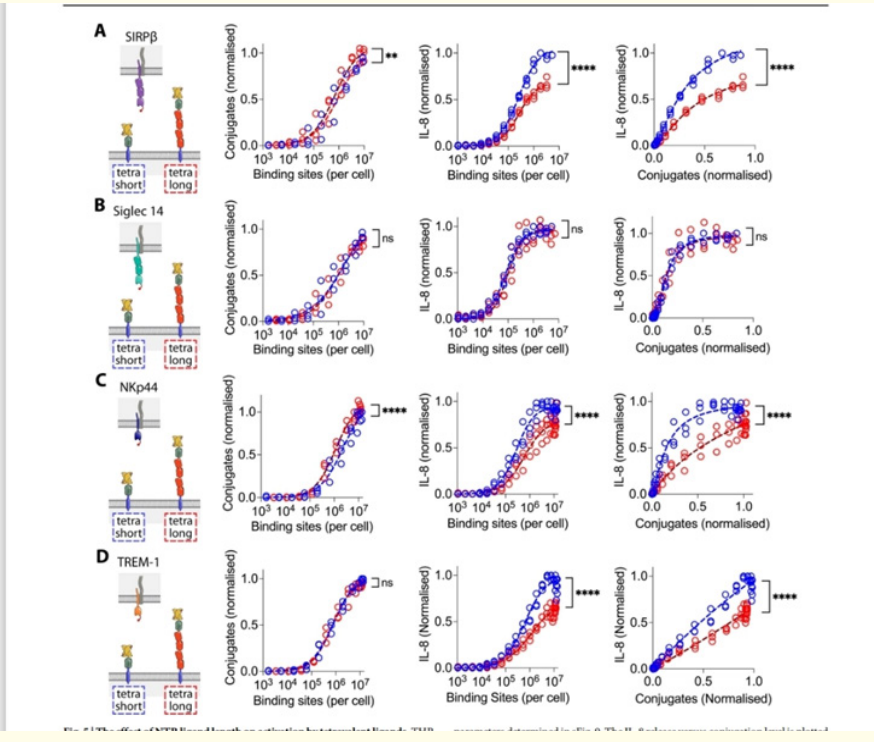

Figure 3

WEKPPEDPPDSKNTLVLFGAGFGAVITVVVIVVIIKCF
CKHRSCFRRNEASRETNNSLTFGPEEALAEQTVFL
CD80 anchor (long). METDTLLLWVLLLWVPGSTGD YPY
DVPDYA TGGSAHIVMVDAYKPTKGGSGGS KVVLGK
KGDTVELTCTASQKKSIQ FHWKNSNQIKILGNQGSFL
TKGPSKLN D D ADSRRSLWDQGNFPLIIKNLKIEDSDT
YICEVEDQKEEVQLLVFGLTANSDTHLLQGQSLTLTL
ESPPGSSPSVQCRSPRGKNIQGGKTLSVSQLELQDSG
TWTCTVLQNQKKVEFKIDIVVLAFQKASSIVYKKEGE
QVEFSFPLAFTVEKLTGSGELWWQAERASSSKSWITF
DLKNKEVSVKRVTQDPKLQMGKKLPLHLTLPQALPQ
YAGSGNLTLALEAKTGKLH QEVNLVVMRATQLQKNL
TCEVWGPTSPKLMLSLKLENKEAKVSKREKAVWVLN
PEAGMWQCLLSDSGQVLLESNIKVLPTRS HVSEDFT
WEKPPEDPPDSKNTLVLFGAGFGAVITVVVIVVIIKCF
CKHRSCFRRNEASRETNNSLTFGPEEALAEQTVFL
CD43 anchor. METDTLLLWVLLLWVPGSTGDYPYDVPD
YATGGSAHIVMVDAYKPTKGGSGGS QESSGMLLVPM
LIALVVVLALVALLLLWRQR QKRRTGALTLSGGGKRN
GVVDAWAGPARVPDEEA TTTSGAGGNKGSEVLETEG
SGQRPTLTTFFSRRKSRQGSLVLEELKPGSGPNLKGEEE
PLVGSEDEAVETPTSDGPQAKDEAAPQSL
CD52 anchor. METDTLLLWVLLLWVPGSTGD YPYDVP
DYAT GGSAHIVMVDAYKPTKGGSGG SDTSQTSSPSAS
SNISGGIFLFFVANAIIHLFCFS
Strep-Tactin-SpyCatcher sequence. Strep-Tactin is underlined, SpyCatcher is in italics and the polyaspartate sequence is in bold.
MAEAGITGTWYNQLGSTFIVTAGADGALTGTYVT
ARGNAESRYVLTGRYDSAPATDGSGTALGWTVAWKN
NYRNAHSATTWSGQYVGGAEARINTQWLLTSGTTEA
NAWKSTLVGHDTFTKVKPSAASDDDGDDDGDDDDS
ATHIKFSKRDEDGKELAGATMELRDSSGKTISTWISDG
QVKDFYLYPGKYTFVETAAPDGYEVATAITFTVNEQGQ
VTVNGKATKGDAHI
Strep-Tactin sequence. MAEAGITGTWYNQLGSTFIVTAG
ADGALTGTYVTARGNAESRYVLTGRYDSAPATDGSG
TALGWTVAWKNNYRNAHSATTWSGQYVGGAEARI
NTQWLLTSGTTEANAWKSTLVGHDTFTKVKPSAAS

Dead Streptavidin sequence. Bold amino acids mark substitutions in order to prevent binding to Strep tag II or biotin.
MAEAGITGTWYA QLG D TFIVTAGADGALTGTYE

AAVGAESRYVLTGRYDSAPATDGSGTALGWTVAWKN
NYRNAHSATTWSGQYVGGAEARINTQWLLTSGTTEA
NAWKSTLVGHDTFTKVKPSAAS

Discussion

In this research we discussed about the how Ligands stimulate the Natural Killer cells and done comparison between ligand graph and the IL8 graph sideways and these are normal reports of person on giving ligands.

Conclusion

Ligands stimulate Natural Killer cells to release IL8 and other cytokines and can be used in the treatment of any outer drug reaction making release of IL against the drug to nullify it.

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