CELLULAR ANTENNA IN SKIN: PRIMARY CILIA AS INFLAMMATORY SKIN DISEASE MARKER.

Poster ID

222

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Introduction:

- The prevalence of AD has increased greatly in the past 30 years.
- House dust mite antigen can trigger allergic disease including AD
- AD often features skin barrier disruption, leading to dryness, itchiness, and invasion by pathogens such as *Staphylococcus aureus*.
- Primary cilia are protruding into extracellular and works as a platform for signaling pathways (Fig.1)
- primary cilia formation and the cell cycle tightly regulate each other, and widely thought that primary cilia regulate cell proliferation and differentiation
- No evidence showing primary cilia existence in human adult skin

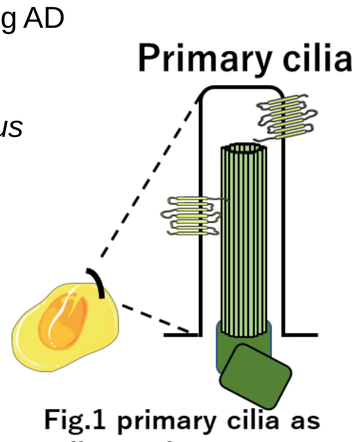
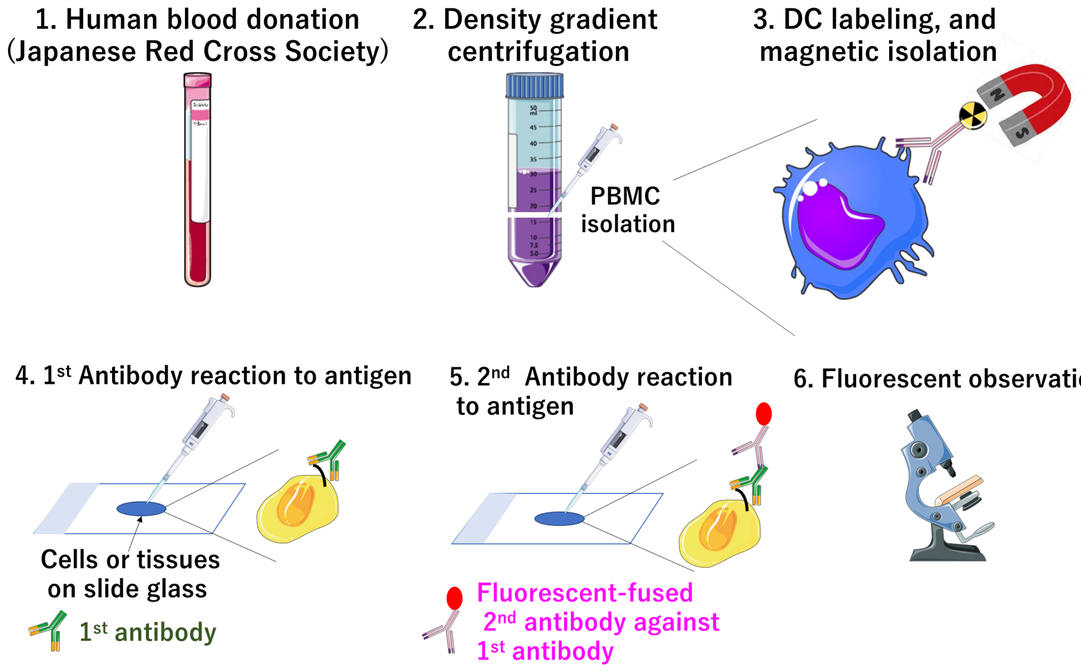


Fig.1 primary cilia as cell signaling antenna

Materials & Methods:



Results & Discussion:

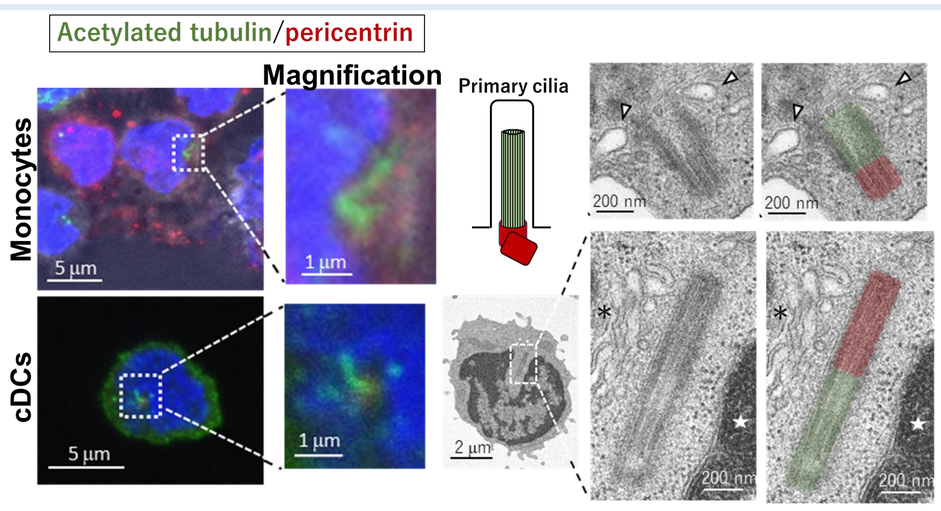


Fig.2 Human primary monocytes and DCs can assemble primary cilia

Results & Discussion (continued):

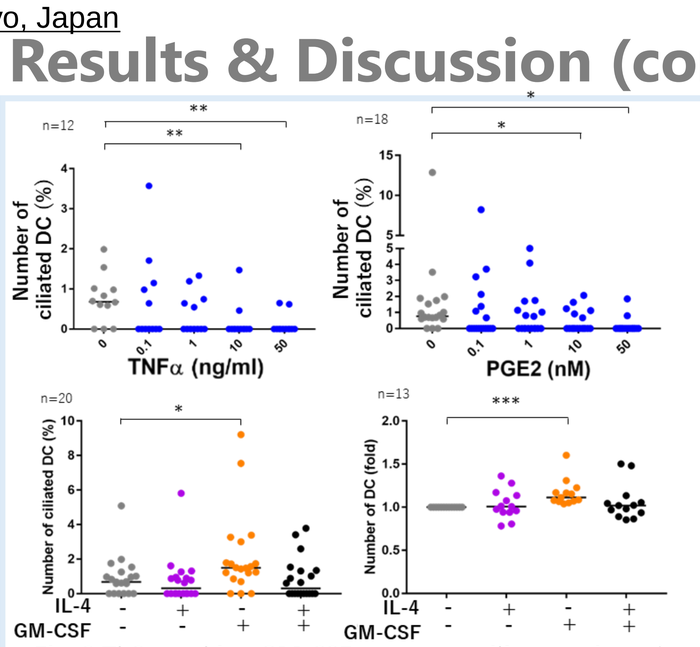


Fig. 3 Th2 cytokine GM-CSF promotes ciliogenesis and proliferation in DCs, while Th1 cytokines inhibits it.

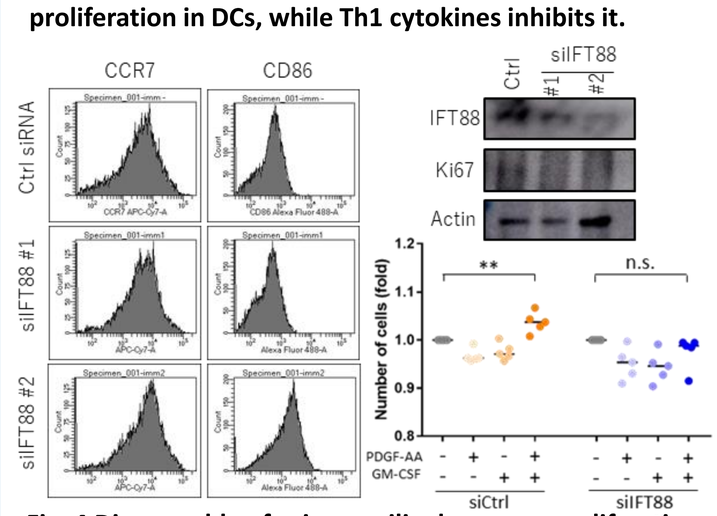


Fig. 4 Disassemble of primary cilia decreases proliferation activity by PDGFRα signaling, and promotes maturation.

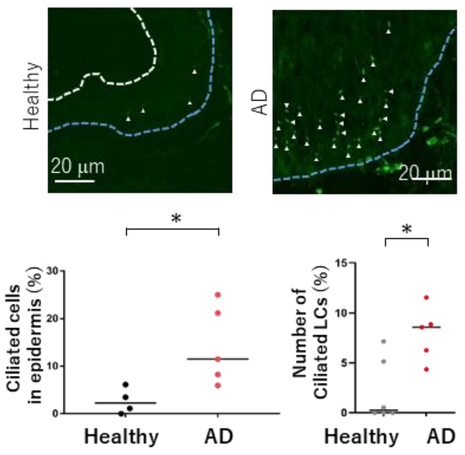


Fig. 5 Primary cilia are highly assembled in KCs and LCs in AD.

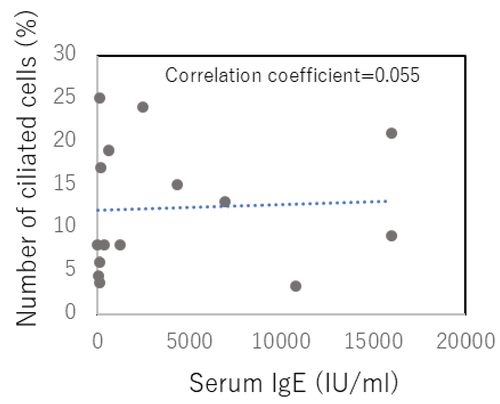
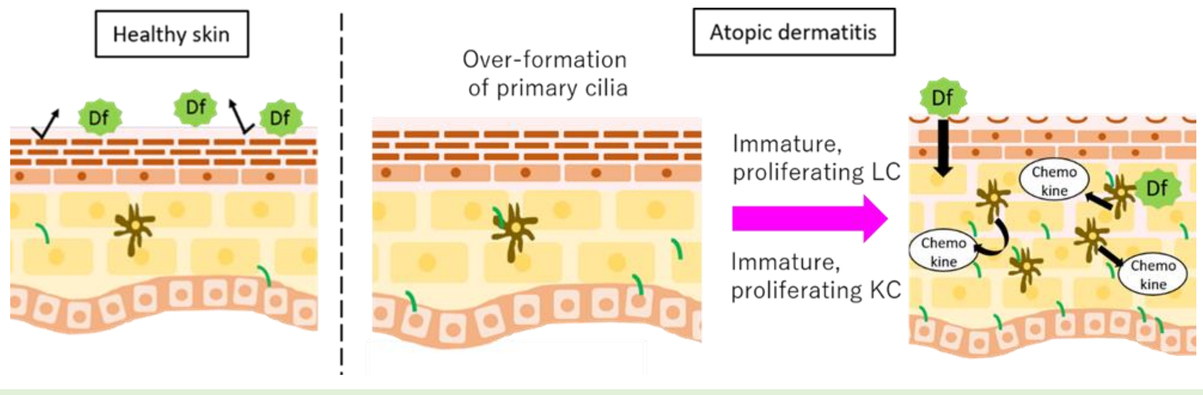


Fig.6 Frequency of primary cilia formation is NOT correlate with total IgE level in serum.

Conclusions:

1. Th1 cytokines significantly inhibited primary cilia formation in DCs/KCs while Th2 cytokines promoted assembling.
2. Disassemble of primary cilia induced cell maturation.
3. Primary cilia is over-assembled in atopic dermatitis epidermis.



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