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BACKGROUND

In a large scale psoriatic proteomic approach where non-lesional, lesional and healthy skin were compared, the protein level of cartilage oligomeric matrix protein (COMP) was found to be elevated in the non-lesional (NL) skin (3,6x). Since the psoriatic uninvolved skin of patients is more sensitive to mechanical stress and COMP has a mechanoresponsive region in its promoter and can interact with several proteins proposed to influence inflammation and keratinocyte proliferation including $\alpha_5\beta_1$ integrin and fibronectin, therefore we aimed to characterize the observed difference further.

Figure 1. Major known interactions and functions of COMP

MATERIALS AND METHODS

- *Skin biopsies*: Patients with moderate-to-severe chronic plaque type psoriasis and healthy volunteers were enrolled into the study. Patients had a medication-free period of at least 4 weeks of systemic and/or at least 2 weeks without local therapy. Samples were collected from lesional skin and from non-lesional skin from at least 6 cm far from the lesion and from healthy volunteers.
- *Immunofluorescent stainings*: primary antibodies: rabbit polyclonal Ab for COMP, mouse polyclonal Ab for β_1 integrin, secondary antibodies: goat anti-rabbit IgG-Alexa Fluor 546, goat anti-mouse IgG-Alexa Fluor 647.
- *Western blot*: primary antibody: goat polyclonal Ab for COMP, secondary antibody: donkey anti-goat IgG-AP.

AIMS

1. To verify the proteomic results by immunofluorescence stainings and Western blot. We aimed to characterize COMP in the context of psoriasis
2. To investigate if COMP could potentially influence basal keratinocytes by direct interaction, COMP was co-stained with β_1 integrin.

RESULTS 1/A

Figure 2. COMP deposition is more pronounced in NL and L skin compared to healthy controls.

REFERENCES

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RESULTS 1/B

Figure 3. COMP shows the highest relative expression in NL skin

RESULTS 2.

Figure 4. COMP colocalized with β_1 integrin in all skin samples (H, NL, L), but it was most frequent in NL skin

PASI-AGE/patients	H1	H5	NL1/L1	NL5/L5
PASI	-	-	22,4	12
Age	51	37	49	55

Figure 5. Patients data for immunofluorescence stainings

SUMMARY & CONCLUSION

Western blot (4 out of 6) and immunofluorescent results (8 out of 10) reflect the outcome of our proteomic approach. COMP showed the highest relative amount in the non-lesional skin. The keratinocyte proliferation of the psoriatic skin shows some similarities to wound healing and our results are well in line with a previous report indicating that in non-healing wounds the level of COMP is elevated while in healing wounds the amount of COMP is minimal. Our results showed that COMP to some extent colocalized with β_1 integrin positive basal keratinocytes in all three skin types, but the joint occurrence of the two protein was the most frequent in non-lesional skin and the lowest in the lesional skin. Therefore, we conclude that COMP may directly interact with basal keratinocyte and it may influence keratinocytes proliferation in psoriasis.