001 Ginsenoside compound K ameliorates the severity of imiquimod-induced psoriatic pathology by inhibiting REG1A/Regll in mice  
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Psoriasis is a chronic inflammatory skin disease. Ginsenoside compound K (CK) is an active ingredient of ginseng which is reported to exert beneficial effects on inflammation. However, the biological role of ginsenoside CK in psoriasis is still unclear. Our aim was to investigate the effect of ginsenoside CK on the proliferation of keratinocytes and the expression of human regenerating liver-derived protein 3A (REG1A) and its mouse homolog Regll as well as the inhibitory effect of ginsenoside CK on IMQ-induced psoriasis-like mice. The effect of ginsenoside CK on the proliferation of HaCaT cells and NHEK cells was measured by MTT. The apoptosis of HaCaT cells induced by ginsenoside CK was analyzed by flow cytometry. The inhibitory effect of ginsenoside CK on REG1A induced by IL-31 in HaCaT cells was identified by WB and qRT-PCR. Psoriatic models in mice were induced by imiquimod cream. The assay of HaCaT cells and NHEK cells, but it could not induce the apoptosis of HaCaT cells. The expression of REG1A protein stimulated by IL-31 is inhibited by ginsenoside CK in HaCaT cells. In the mouse model of psoriasis, the topical application of ginsenoside CK significantly decreased the epidermis thickness of lesional skin of psoriatic mice and the expression of Regll protein. Ginsenoside CK inhibited the proliferation of HaCaT cells and NHEK cells as well as attenuated imiquimod-induced psoriasis-like pathology in mice by reducing the expression of REG1A/Regll protein. These results indicated that ginsenoside CK exhibited therapeutic effects in psoriasis.

002 RNA-seq analysis reveals unique transcriptome signatures in dermatomyositis with distinct autoantibodies specificities  
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We examined the antibody in the sera of patients with DM/CADM and described HRCT scores and findings in patients with positive anti-MDAS antibody. Methods. We screened 79 patients with various CTDs, including 38 with DM/CADM (22 of DM, 16 of CADM). Anti-MDAS antibody was detected by enzyme-linked immunosorbent assay (ELISA) and the results were confirmed by immunofluorescence. Results. The level of anti-MDAS antibody shown by the ELISA was significantly greater in the samples from patients with CADM than in those from patients with classic DM (194.9±377.5 vs 37.2±8161, P=0.002). ASM protein was complicated more frequently in DM/CADM-positive patients than in those of DM/CADM-negative patients (66.9% vs 0, P=0.001). The HRCT scores of the MDAS-positive subset were increased compared with those MDAS-negative group (122.9±54.8 vs 70.0±59.8, P=0.041) and correlated with anti-MDAS antibody level (r=0.514, P=0.012). Conclusion. Anti-MDAS antibody was found in an unusually high frequency in this group of Chinese patients. HRCT diagnosis should combine with the detection of anti-MDAS antibody, which will help us to determine the pathologic type and prognosis of patients with DM/CADM.

003 A case of wong-type dermatomyositis with Anti-TIF1-γ antibody  
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Anti-transcription intermediary factor 1 (TIF1-γ) antibody have been identified in cases with cancer-associated DM. We report the first case of positive anti-TIF1-γ antibody in Wong-type DM associated with parotid gland tumor and demonstrated the importance of detection of serum anti-TIF1-γ antibody and screening tumor in Wong-type DM. The titer of the antibody was also closely correlated with the severity of cutaneous and the prognosis of the disease. Dynamic observation of serum anti-TIF1-γ antibody levels would be helpful in predicting the course and facilitating better therapeutic targeting.

004 HRTC in accessing of interstitial lung disease in dermatomyositis with positive expression of anti-MDAS autoantibody  
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Dermatomyositis (DM) is a connective tissue disorder presenting with muscle weakness and skin rash. More than 30 autoantibodies have been identified in cases with DM. Anti-MDA5 antibody is frequently found in skin fibrosis and inflammation, and is a marker of inflammatory dermatomyositis (DM). In this study, we performed high throughput sequencing technologies in 27 dermatomyositis and 7 healthy volunteers. These dermatomyositis patients were segregated into three subsets based on distinct autoantibodies present in their sera. Including 10 patients that anti-MDA5 antibody are positive with interstitial lung disease (ILD), and 8 patients that anti-transcriptional intermediary factor 1-γ (TIF1-γ) antibody positive with tumor, and 9 patients that both two antibodies are negative with neither interstitial lung disease nor tumor. We extract RNA from the peripheral blood mononuclear cells of these patients and healthy controls. BGI-seq 500 RS was using for sequencing. Gene ontology analysis and pathway enrichment analysis revealed cytokine activity, receptor binding and protein binding molecular function were specifically dysregulated in MDAS positive patients. Glycosaminoglycan binding and antioxidant activity were specifically dysregulated in TIF1-γ positive patients. Both patient subsets were compared with antibodies negative patients. We also found different immune pathway between three subsets. Such as innate and adaptive immune system play an important role in the pathogenesis of dermatomyositis. This study has identified unique expression pattern of transcripts in DM patients. This ‘sub-grouping’ approach could further be useful for clinical evaluation of DM patients and devising targeted therapies.

005 Elucidating the mechanism(s) of silica nanoparticle induced immunomodulation in contact hypersensitivity  
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Nanoparticle (NP) enabled consumer products and biomedical devices have become ubiquitous. Many examples exist of NP-based products in the cosmetic, sunscreen, and textile industries. While currently used as an anti-aging agent in cosmetics and foods, silica NPs have been the focus of numerous transdermal drug delivery studies, which can lead to increased dermal exposure. Research on the lungs and gastrointestinal tract have highlighted a potential role for silica NPs in the immune system in contact hypersensitivities. The current study was designed to elucidate the effect of silica NPs on both healthy and inflamed skin using our lab-topically exposed hairless C57BL/6 mice to a dinitrofluorobenzene (DNFB) allergen, with or without NP pretreatment, in the challenge phase of a contact hypersensitivity response. Previous studies have topically applied 200 μm silica NPs decreased the DNFB induced ear swelling response, and this effect was characterized by decreased cytokine expression (IL-1β and MIP-2) and reduced cytotoxic T-cell localization in skin 24 hours after DNFB challenge. To elucidate the mechanism of action of these NPs, we conducted a RNA sequencing study on whole skin samples. The transcriptome analysis revealed over 3400 differentially expressed genes in DNFB treated skin, compared to control skin. Pathway analysis reveals that many of the genes are involved in skin barrier repair, antioxidant response, and immune signaling. Interestingly, the majority of genes were uniquely expressed in both DNFB and NPs compared to skin treated with only DNFB. Genes associated with fatty acid oxidation, activator protein-1 signaling, and antioxidant activity were all upregulated, compared to DNFB only samples. While more work is needed to identify whether changes in the transcriptome lead to functional changes in the skin, this data provides insight into potential mechanisms of silica NP induced skin immunomodulation.

006 Topical application of caffeoyl prolyl histidine amide suppresses 2,4-dinitrochlorobenzene-induced atopic dermatitis-like symptoms in BALB/c mice  
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Topical application of cinnamic acid amide, caffeoyl prolyl histidine amide suppresses 2,4-dinitrochlorobenzene-induced atopic dermatitis-like symptoms in BALB/c mice.

007 ABSTRACTS

Adaptive and Auto-Immunity