**Good correlation of a murine model of oxazolone-induced chronic dermatitis with major gene hallmarks of atopic dermatitis in human patients**

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Atopic dermatitis (AD) is a chronic, relapsing, inflammatory skin disease characterized by pruritus and eczematous skin lesions. It has been described that repeated topical application of oxazolone in the ears of sensitized mice induces lesions that mimic some features of AD. We had previously characterized and pharmacologically validated a model of dermatitis induced by 4 challenges of oxazolone (OXA) applied on days 7, 9, 11 and 14 post-sensitization. In the present study, we analyzed the gene expression/pathway signature induced by OXA, and assessed its relevance and correlation with human AD data. We performed a transcriptome profiling by RNA sequencing (HTP pathway high-throughput RNA-seq). The experimental set up consisted of 2 groups, healthy and OXA-treated, with 6 biological replicates per group. For 3' end RNA sequencing, a QuantSeq 3' mRNA-Seq Library Prep Kit was used followed by lllumina single end sequencing with read length of 75 bp on the NextSeq 500 Sequencing System (lllumina). On average, 20 million indexed reads per sample were generated.

We detected a strong effect of OXA treatment with respect to untreated ears in sensitized animals, as well as with respect to vehicle-treated ears in non-sensitized animals.

To assess the transferability of our model to human, we calculated a similarity score (Pearson correlation) between the fold changes from the RNA-seq of our model with fold changes from different previously published human studies in AD and psoriasis (PS). As expected, our model was reflecting well the transcriptomic impact between lesional and non-lesional samples in both studies. Importantly, we observed a significantly higher similarity in these fold changes for AD samples than for PS.

Overall, our results show that this model replicates relevant transcriptomic human AD features, showing better correlation with AD than with another skin autoimmune condition such as PS, making it suitable for screening and molecule profiling purposes.