

Description of Additional Supplementary Files

Supplemental Data Legends

Supplemental Data S1 shows differentially expressed genes (DEGs) in *Mir149^{EKO}* versus WT keratinocytes.

Supplemental Data S2 lists 707 experimentally validated miR-149 targets from RNAcentral.

Supplemental Data S3 includes 3591 DEGs from bulk RNA-seq of psoriasis versus healthy epidermis (GSE274560).

Supplemental Data S4 shows 1086 DEGs from bulk RNA-seq of IMQ-treated back skin in *Mir149^{EKO}* versus WT.

Supplemental Data S5 lists 354 enriched biological processes from GSEA analysis of the IMQ transcriptome.

Supplemental Data S6 details 807 DEGs from mice with subcutaneous Tweak injection compared to controls (GSE96957).

Supplemental Data S7 and **S8** present the top 50 cluster-specific gene signatures for keratinocytes and immune cells from PBS- or IL-23-injected WT and *Mir149^{EKO}* mice, respectively.