Supplementary Figure Legends

Supplementary Figure 1. Analysis of PLCε expression in leukocytes. *A*, Immunohistochemical analysis (IHC) of TPA-treated skin sections. Sections of the dorsal skin of a *PLCε*$^{+/+}$ mouse 48 hrs after TPA application were stained with anti-PLCε and anti-Gr-1 antibodies along with DAPI. Bar, 50 μm. *B.* Analysis of splenic B-lymphocytes. The expression of PLCε in splenic B-lymphocyte and non-B-lymphocyte fractions of *PLCε*$^{+/+}$ mice was analyzed by RT-PCR and Western blot. C. Analysis of thioglycollate-elicited macrophages (*MΦ*). The expression of PLCε was similarly analyzed in thioglycollate-elicited macrophages (*MΦ*) collected from *PLCε*$^{+/+}$ and *PLCε*$^{-/-}$ mice (*lower panel*). Fibroblasts and P19 cells were used as positive controls in RT-PCR and Western blot, respectively. Reverse transcriptase (*RTase*)-minus controls are also shown.

Supplementary Figure 2. Gene silencing of Rap1 isoforms by their specific siRNAs. *A*, expression of Rap1 isoforms. Rap1A and Rap1B mRNAs in dermal fibroblasts were detected by RT-PCR. Reverse transcriptase (*RTase*)-minus controls were included. *B*, siRNA-mediated knockdown of Rap1. Dermal fibroblasts were transfected with control siRNA (*Cont*), or two different combinations of Rap1A-targeting and Rap1B-targeting siRNAs as indicated. Rap1 levels were examined by Western blotting with anti-Rap1 antibody. PLCε and actin levels were used as controls for non-specific side effects of siRNAs.

Supplementary Figure 3. Gene silencing of TPA-activated GEF for Rap1 in dermal fibroblasts by its specific siRNAs. *A*, expression of various RasGRP isoforms in dermal fibroblasts. Total cellular RNAs extracted from epidermal keratinocytes, dermal fibroblasts and whole embryos of embryonic day (*E*) 13 and 17 were examined for mRNA levels of RasGRP1~4 by RT-PCR. *B.* Dermal fibroblasts were transfected with control siRNA (*Cont*), or two different siRNAs as indicated. *RasGRP3* mRNA level was

examined by RT-PCR. *GAPDH* mRNA level was also examined as controls for non-specific side effects of the siRNA.