

**Supplemental Figure 1.** Construction of transgenic, epidermis-specific cystatin M/E expressing mice. *A*)Map of the cystatin M/E – eGFP expression construct. The transgene construct for specific epidermal transgenic expression of cystatin M/E comprises five main elements: the 3.7 kb human involucrin promoter, a *Cst6* cDNA fragment encoding mouse cystatin M/E, an IRES sequence, the eGFP coding sequence, and a SV40 poly(A) signal. The transgene can be excised from the pBS-INV-*Cst6*-IRES-eGFP expression plasmid using *Sal* I and *Spe* I restriction sites. *B*) eGFP protein expression analysis by flowcytometry in non-transfected and pBS-INV-*Cst6*-IRES-eGFP transfected keratinoctyes. The transfected sample shows an increased number of eGFP-positive keratinocytes compared to non-transfected cells. *C*) Fluorescence microscopy shows eGFP expression in a pBS-INV-*Cst6*-IRES-eGFP transfected keratinocyte. *D*) Expression of mouse cystatin M/E in transfected keratinocytes. Reverse transcriptase PCR on cDNA from non-transfected (lane 1), pIRES2-eGFP transfected (lane 2), and pBS-INV-*Cst6*-IRES-eGFP transfected keratinocytes (lane 3) using primers specific for mouse *Cst6*.Water (lane 4) served as a negative control for the PCR reaction. Only keratinocytes transfected with the cystatin M/E expression vector are positive for *Cst6* mRNA as indicated by the 475 base pair fragment (*arrowhead*). *E*) ELISA specific for the detection of mouse cystatin M/E in medium taken from non-transfected, pIRES2-eGFP transfected and pBS-INV-*Cst6*-IRES-eGFP transfected keratinocyte cultures. Recombinant human cystatin M/E serves as a negative control.