Supplementary figure legends:

Supplementary figure 1:

(**A**) Analysis of VE-statin/egfl7-HA transgene expression in founder mice.

Anti-HA immunoblot detected VE-statin/egfl7-HA (~30kDa) expressed as a transgene in tail tissue extracts from two founders. Ctrl: transiently transfected NIH3T3 cells with pCDNA3-VE-statin/egfl7-HA, WT: Wild type mice, K14-VE-statin: transgenic mice.

(**B**) Vascular bundles of the tail immunostained with anti-VE-statin/egfl7 antibody. VE-statin/egfl7 is detected in transgenic mice lateral and dorsal bundles but not in control WT mice.

Supplementary figure 2:

Upper panels: Elastin Van Gieson staining of skin sections from wild type and transgenic mice. Long and thick elastic fibers are observed in WT mouse dermis (black arrowheads) whereas few and fragmented fibers are stained in transgenics (red arrowheads).

Middle panels: Weak elastin immunostaining of skin sections from transgenic mice compared to wild type mice.

Lower panels: VE-statin/egfl7 immunostaining of skin sections revealed VE-statin/egfl7 accumulation in transgenic mice whereas VE-statin/egfl7 is not detected in wild type mouse dermis (scale bar, 10 μm).

Supplementary figure 3:

Northern blot analysis of elastin expression in fibroblast cultures treated with VE-statin/egfl7 shows unmodified *elastin* expression when compared to control. GAPDH was probed as control.

Supplementary figure 4:

Left panels: VE-statin/egfl7 and LoxL2 immunostaining in extracellular matrix of HUVEC cells. One week old confluent HUVEC cells were detached from the extracellular matrix using 0.5% deoxycholate in PBS before immunostaining for VE-statin/egfl7 and LoxL2 using alexa fluor 488 goat zenon kit (Invitrogen) and anti-goat alexa fluor 594 (Invitrogen).

Right panels: VE-statin/egfl7 and LoxL2 immunodetections of HUVEC cells before actin cell staining using alexa fluor 350 phalloidin (Invitrogen).

Supplementary figure 5:

Efficient VE-statin- and LoxL2-silencing in HUVEC cells transfected to analyse tropoelastin expression in the experiment shown in Figure 9C. Quantitative RT-PCR analysis confirmed VE-statin and LoxL2 inhibition by siRNAs. Reactions were performed in triplicate. Results are expressed as mean of relative quantity ± SD.

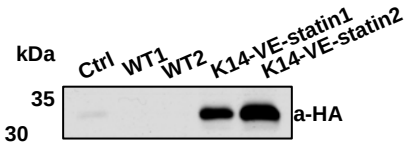
Supplementary Table 1:

Oligonucleotides used to amplify full length cDNA of VE-statin and LOX enzymes or mutated cDNA of lysyl oxidases before cloning into respective expression vectors.

Supplementary Table 2:

Oligunucleotides used for RT-PCR analysis of tropoelastin and LOX enzymes in HUVEC cells.

A



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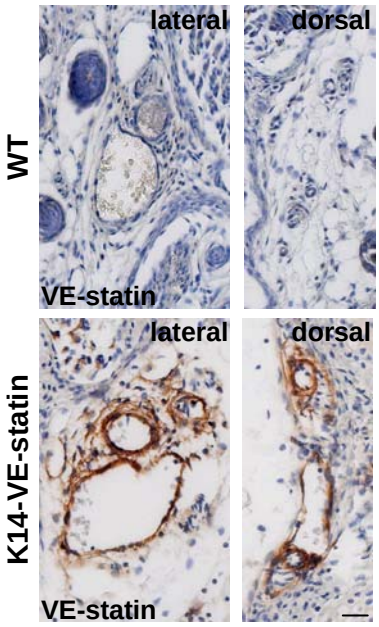
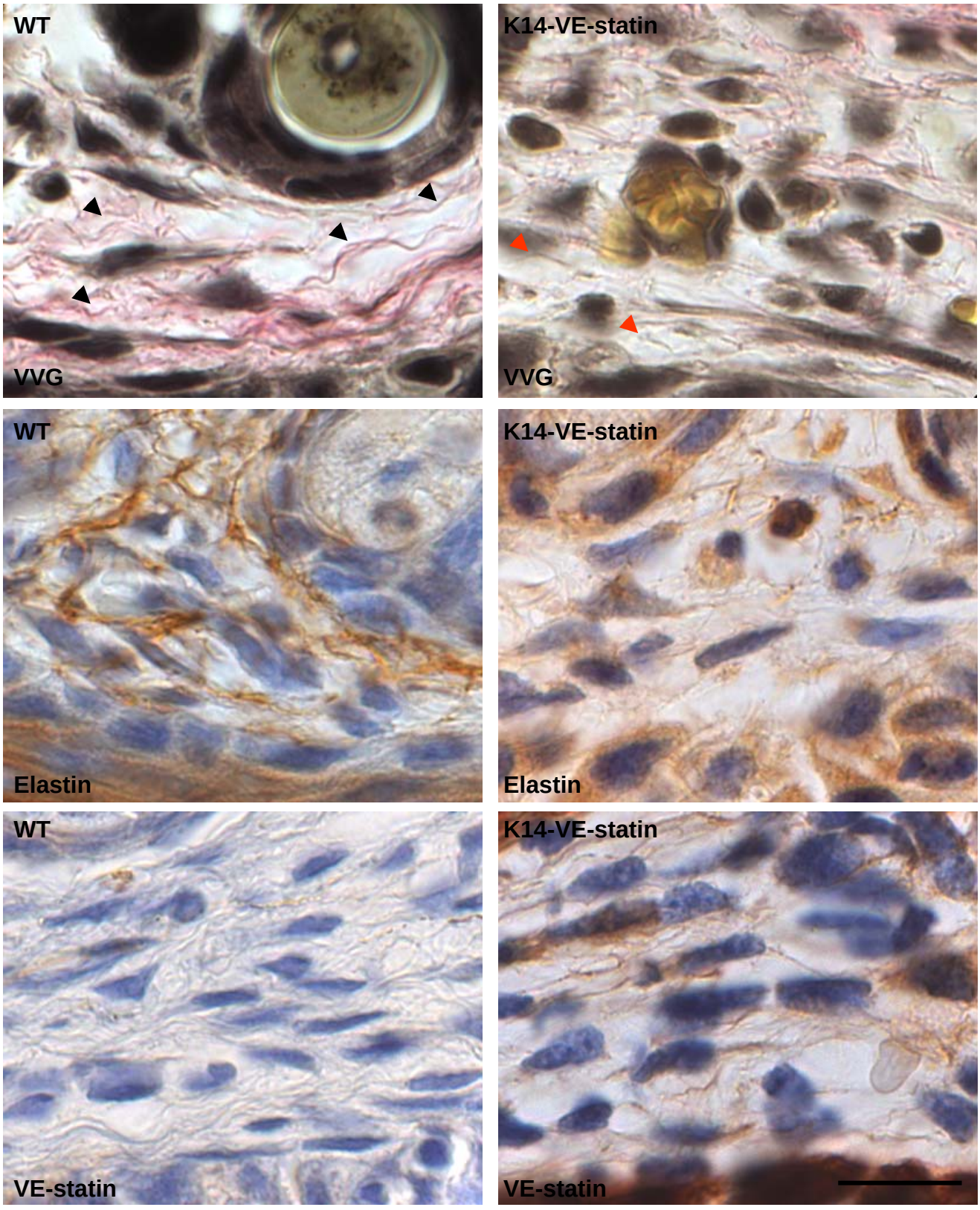
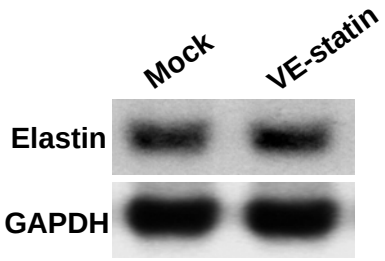


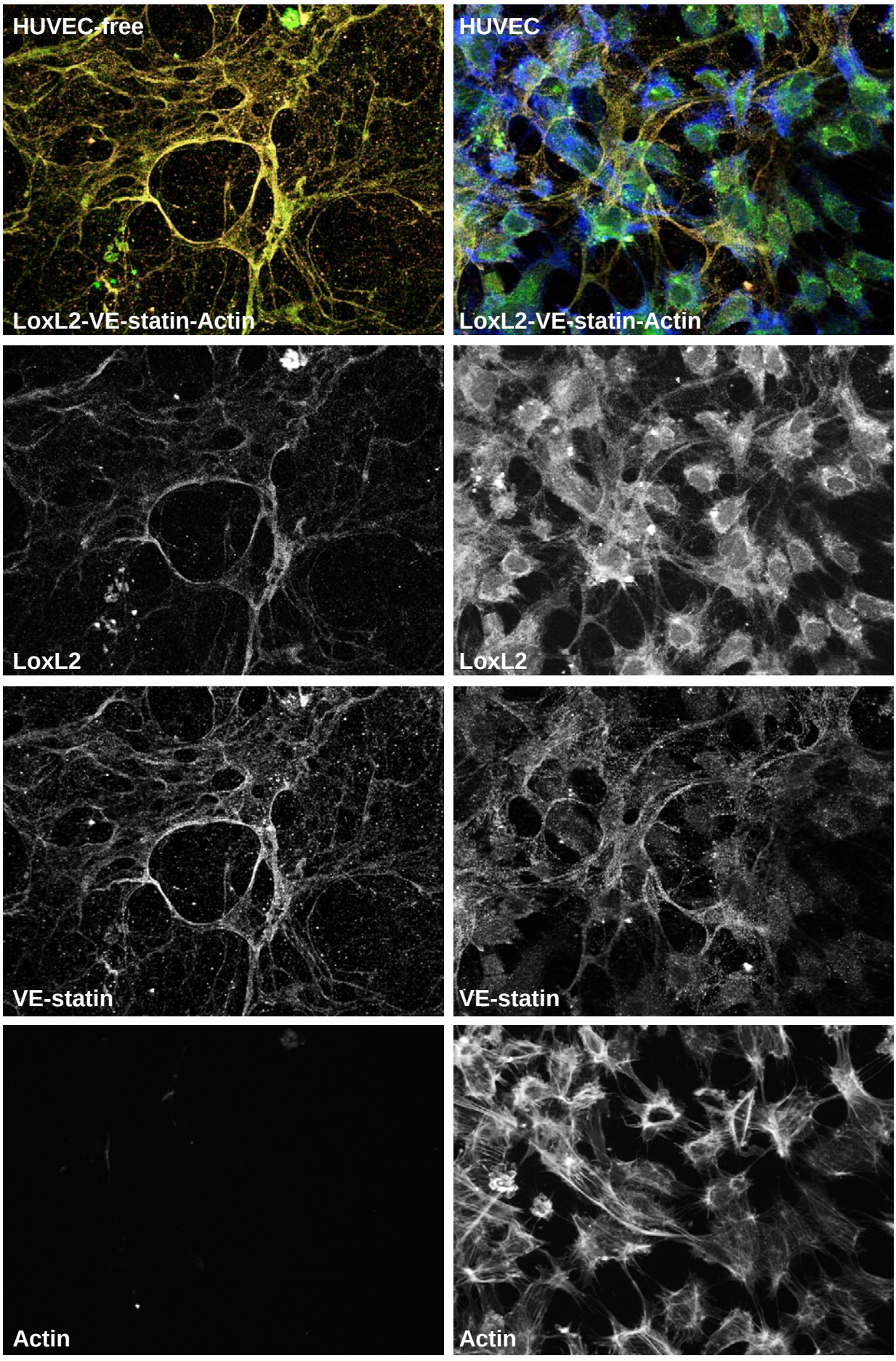
Lelièvre et al. Suppl. Figure 1



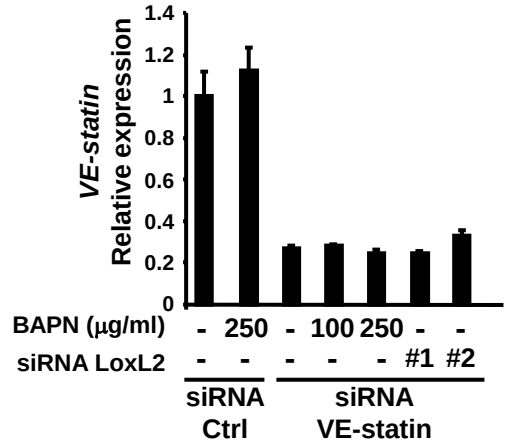
Lelièvre et al. Suppl. Figure 2

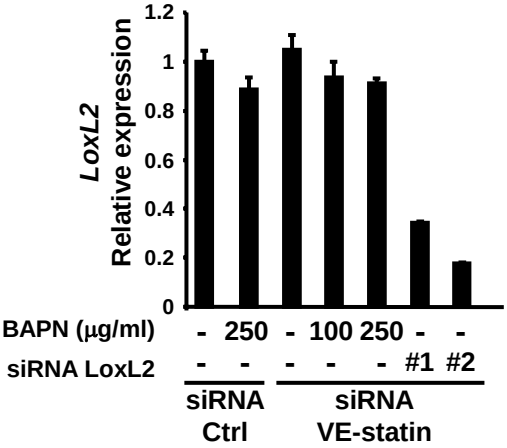


Lelièvre et al. Suppl. Figure 3



Lelièvre et al. Suppl. Figure 4





Lelièvre et al. Suppl. Figure 5

Inserts	Oligos
VE-statin	Fwd : 5’ ACCCCGGATCCAGATGCAGACCATGTGG 3’ Rev : 5’ GACTGGATCCTCAGTAATCCGGCACATCGTAAGGGTAGCTGGCCAGATCTTTTTTGCAGG 3’
Lox	Fwd : 5’ AAAAGCGGCCGCGGGAGCACCATGCGTTTC 3’ Rev : 5’ AAAAGTCGACGATACGGTGAAATTGTGCA 3’
LoxL1	Fwd : 5’ AAAAGCGGCCGCAGGGCCACTATGGCTCTG 3’ Rev : 5’ AAAAGTCGACGGGACTGGACGATTTTGCA 3’
LoxL2	Fwd : 5’AAAAGCGGCCGCAGGACAAGGATGGAGCTCCATTTTGGC 3’ Rev : 5’AAAACTCGAGCTGTACAGAGAGCTGGTT 3’
LoxL3	Fwd : 5’AAAAGCGGCCGCCCACCCGCCATGAGAGCT 3’ Rev : 5’AAAACTCGAGGACGATCTGGTTACTAGT 3’
LoxL4	Fwd : 5’AAAAGCGGCCGCGAAATCACCATGATGTGG 3’ Rev : 5’AAAACTCGAGGATCAAGTTGTTCCTGAG 3’
Cat-Lox	Fwd : 5’ CGCGAGCCGCCCGCCGCCGGTCTCCCGGACCTGGTG 3’ Rev : 5’CACCAGGTCCGGGAGACCGGCGGCGGGCGGCTCGCG 3’
LoxL1ΔCat	Fwd : 5’ AAAAGCGGCCGCAGGGCCACTATGGCTCTG 3’ Rev : 5’ AAAAGAGTCGACGGCGACCATTCTGGTTGGG 3’
Cat-LoxL1	Fwd : 5’ GGACAGGGCTCGGACCCAGGCCTCCCTGACTTAGTC 3’ Rev : 5’ GACTAAGTCAGGGAGGCCTGGGTCCGAGCCCTGTCC 3’
Cat-LoxL2	Fwd : 5’ CCCTACCAGCTCCAGTACACTGCACCTGACCTGGTG 3’ Rev : 5’ CACCAGGTCAGGTGCAGTGTACTGGAGCTGGTAGGG 3’
Cat-LoxL3	Fwd : 5’ CCTTCTATCAGCCCAGAGACTGCTTCAGATCTGCTG 3’ Rev : 5’ CAGCAGATCTGAAGCAGTCTCTGGGCTGATAGAAGG 3’
Cat-LoxL4	Fwd : 5’ CAGTCATCAGGCACCAAGAGTGCTCCAGACCTCGTG 3’ Rev : 5’ CACGAGGTCTGGAGCACTCTTGGTGCCTGATGACTG 3’

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HuVE-statinfwd	CCTGCAGGATGGCGGGGTGACA
HuVE-statinrev	GCGGCCGAGCTGCTGGAAGGAG
Actinfwd	CGGTGACGGGGTCACCCACA
Actinrev	AAGCATTTGCGGTGGACGAT
HuElnfwd	AGCGGGCTGGGGCATTTCTCC
HuElnrev	TGCAGCAGCGTCAGCCACTCCA
HuLoxfwd	GGACGGCCGGCTCATCTGG
HuLoxrev	GGAATATCTTGGTCGGCTGGGTAA
HuLoxL1fwd	GTGGCCTCGGCGGGGGTCATCTAC
HuLoxL1rev	CGTGGCCGGTTGGGGAGGAAGTCT
HuLoxL2fwd	GAGGGCCGGGTGGAGGTGTA
HuLoxL2rev	GTGCGCTTGCGGTAGGTTGAGA
HuLoxL3fwd	CGAGGGCCGCGTGGAGATACA
HuLoxL3rev	CCACCCCATGCAGACCAAAGGAGT
HuLoxL4fwd	GCTTGGCTGGTGGGCGTATCC
HuLoxL4rev	AGCGGGCGGTCCTCCAAGTAG

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