Supplemental Table 1: Hydroxylating activity of CYP52M1 against various fatty acids.

(- no hydroxylation; + <10% substrate conversion, ++ 10–25% substrate conversion).

Fatty acid	Activity
C12:0	-
C14:0	-
$C16:1^{\Delta 9}$	++
C16:0	++
$C18:3^{\Delta 6, \Delta 9, \Delta 12}$	++
$C18:3^{\Delta 9, \Delta 12, \Delta 15}$	++
$C18:2^{\Delta 9, \Delta 12}$	++
$C18:1^{\Delta 9}$	++
C18:0	++
$C20:4^{\Delta 5, \Delta 8, \Delta 11, \Delta 14}$	+
$C20:1^{\Delta 11}$	+
C20:0	-
C22:0	-

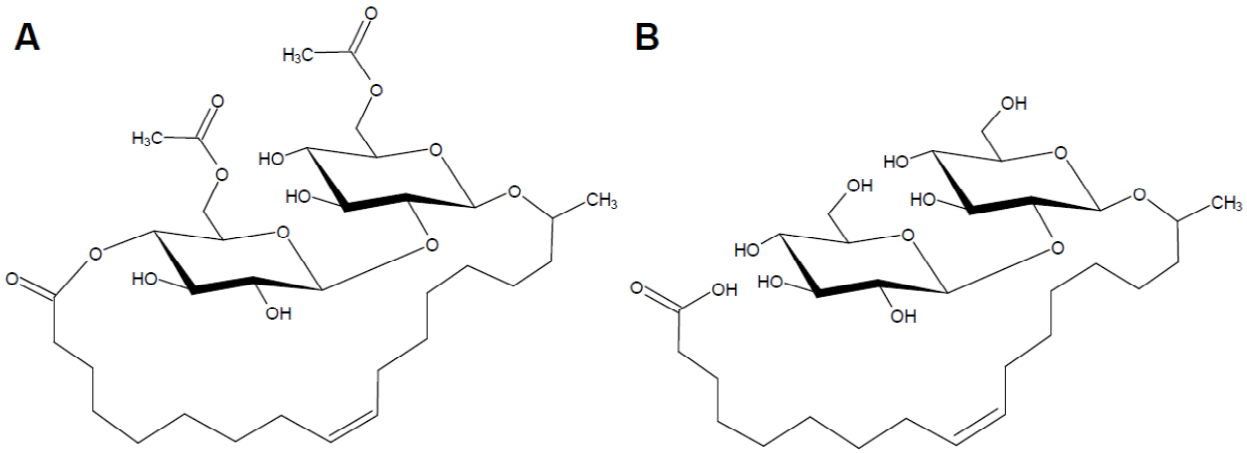

Fig. S1. Examples of sophorolipids produced by *S. bombicola*. (A) diacetylated lactonic sophorolipid, (B) non-acetylated open-chain sophorolipid.

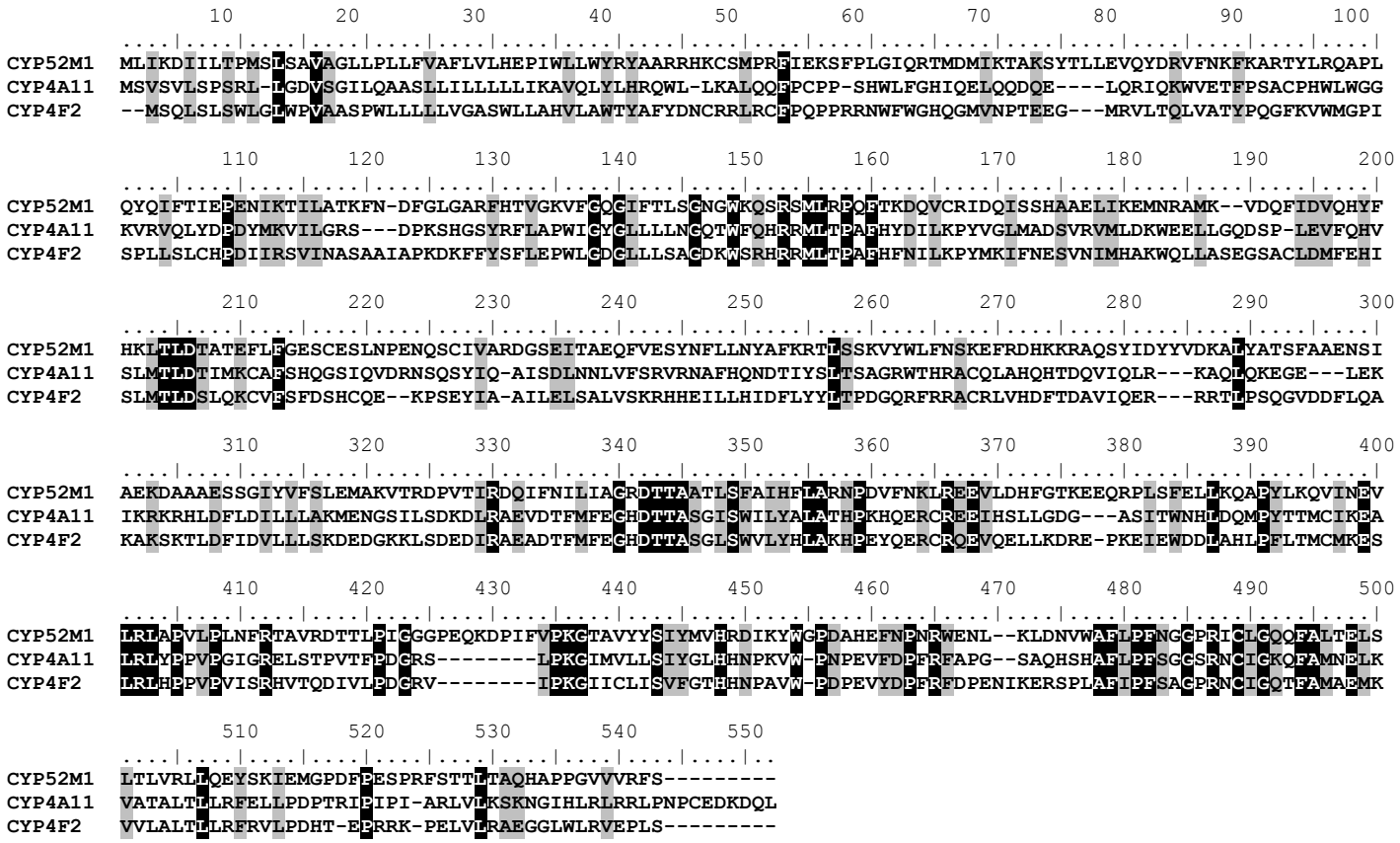

Fig. S2. Alignment of the CYP52M1 protein (Genbank Accession Number EU552419) with human CYP4A11 (Genbank Accession Number AAA58436) and CYP4F2 (Genbank Accession Number AAI36300). Multiple sequence alignments were made with the CLUSTAL W program.

^{1}H NMR of purified **20-HETE** peak

^{1}H NMR of flash column fraction containing **19/20-HETE**

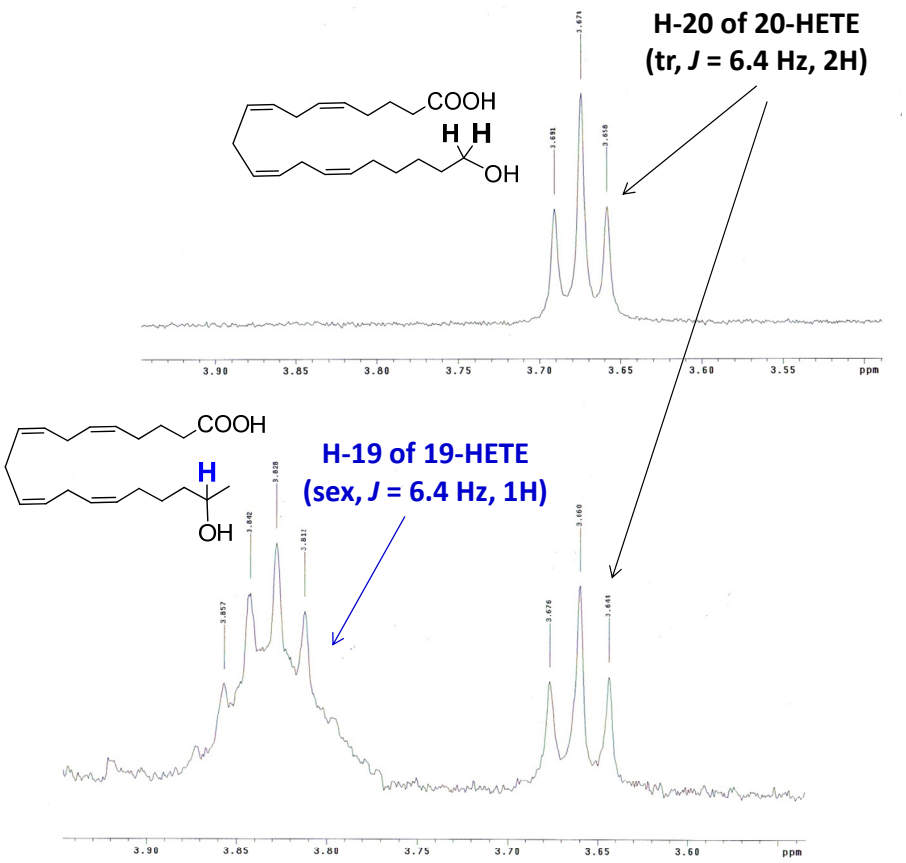

Fig. S3. 19- and 20-HETE show characteristic signals at δ 3.6-3.9 ppm.

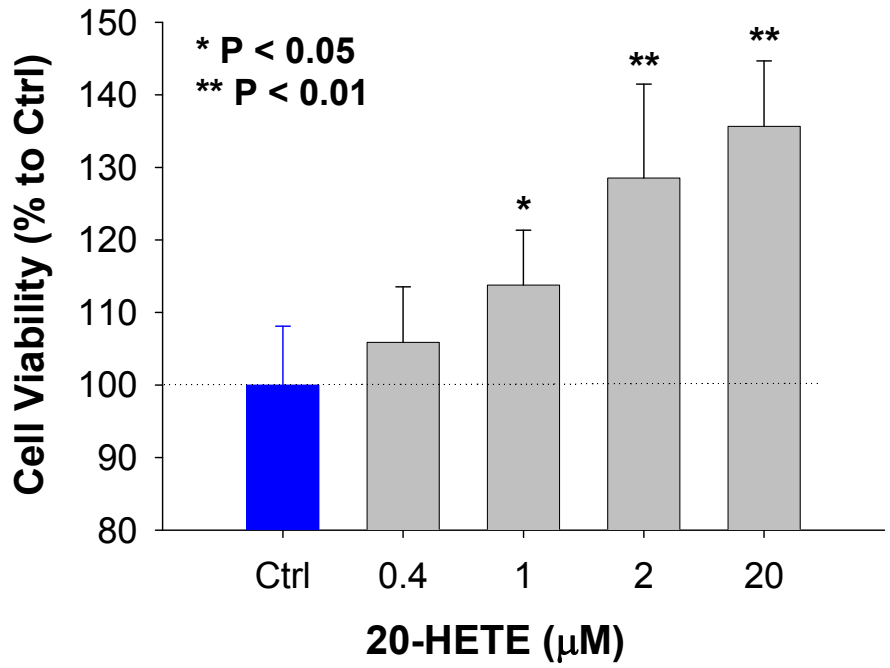

Fig. S4. 20-HETE increased endothelial cell proliferation in HUVECs after 18 h treatment. The HUVECs were serum-starved for 24h, then treated with 20-HETE in basal medium for 18 h, cell viability was assessed by a MTT assay.