

Table S1. Primers sequences used in RT real-time PCR- for detection of deacetylase and acetylase gene expression in human normal fibroblasts upon treatment with 3-hydroxybutyrate and same genes related to inflammatory state upon induction of inflammation by LPS

GENE NAME	FORWARD PRIMER		REVERSE PRIMER	
	NAME	SEQUENCE	NAME	SEQUENCE
Homo sapiens histone deacetylase 1	HD1_FP	GAGGACTGTCCAGTATTCG	HD1_RP	GATGCCTCGGACTTCTTT
Homo sapiens histone deacetylase 2	HD2_FP	ATGAAGCCTCATAGAATCCG	HD2_RP	GTTATCTGGTCTTATTGACCGT
Homo sapiens histone deacetylase 3	HD3_FP	ATCGTCTTCAAGCCATACC	HD3_RP	GAAACACTGGGCAGTCATC
Homo sapiens histone deacetylase 8	HD8_FP	GGTGACGTGTCTGATGTT	HD8_RP	GACCACTGCTTTGGGATT
Homo sapiens histone acetyltransferase 1	HAT1_FP	ATACCTACTCAGTTCTCAGTCCAA	HAT1_RP	CCACGTCAATAAAGCTAGCA
Homo sapiens histone acetyltransferase MORF	MORF_FP	CAAACACATCACCAGGTGAA	MORF_RP	ATCCAAACGTGCAGAGT
Homo sapiens histone acetyltransferase MOZ2	MOZ_FP	CAAACACATCACCAGGTGAA	MOZ_RP	ATCCAAACGTGCAGAGT
Homo sapiens histone acetyltransferase MYST	MYST_FP	CTGAGCGCAAGATCACT	MYST_RP	ACCAGGCATCAATTTCGT
Homo sapiens histone acetyltransferase MYST2	MYST2_FP	GCCGGGATAAGCAGATAG	MYST2_RP	CTTTCTGTTCTTTGCTCAGT
Homo sapiens histone acetyltransferase (HBO1)	HBO1_FP	GAGGCAGCTTCGATATAAGG	HBO1_RP	ATACTCGCTTGTCAGGTTT
Interleukin 6 (IL-6)	IL6_FP	CCAGGAGCCCAGCTATGAAC	IL6_RP	CCCAGGGAGAAGGCAACTG
Interleukin 1 beta (IL-1β)	IL1b_FP	TGAACTGAAAGCTCTCCACC	IL1b_RP	CTGATGGACCAGTTGGGGAA

Table S2. Entire population data (patients' characteristics and disease history) (* mean ± standard deviation (percent total))

GENERAL INFORMATION	
No. of subjects*	23
Age*, years	65 ±8
GENDER	
Female, number (%)*	11 (47.8%)
Male, no. (%)*	12 (52.2%)
BMI*, kg/m ²	29.7 ± 4
City dwellers, no., (%)*	4 (17.4%)
Village dwellers, no., (%)*	19 (82.6%)
THE WORK	
Full time, no. (%)*	6 (26%)
Retired, no. (%)*	17 (74%)
ANGIOLOGICAL PROFILE – DATA ON VENOUS LEG ULCERS	
Duration of ulcers, years*	9.1 ±8.1
No. of ulcers per patient	2.8± 2
Character of ulcerations	
Recurring, no. of patients (%)*	9 (39.1%)
Not recurring, no. of patients (%)*	14 (60.9%)
LOCAL TREATMENT	
Status post surgery (saphenectomy), no. of patients (%)*	5 (21.7%)
Skin graft usage, no. of patients (%)*	5(21.7 %)
Local treatment the most frequently used before study	
Dressings used before the study	Gauze, Atrauman Ag, Comfeel, Textus bioactive, Sorbact, Aquagel, Biatain, Biatain Ag, Granuflex, Hydrosorb Gel, Tender Vet 24, Varolast, Solcoseryl, Aquacel, Granuflex, Iruxol mono,
Ointments	Argosulfan, Baneocin, Gentamycin, Neomycin, Zinalfat, Diprobace, Solcoseryl, Octenisept, Fibrolan
General treatment used before the study (pills)	Antibiotics according to the antibiogram (Augmentin – the most frequently used), Vessel Due F, Diosmin, Venescin, anti-inflammatory drugs
Use of drugs delaying ulcers' healing, no. of patients (%)* (sulfasalazine, metypred, acenocoumarol – because of rheumatoid arthritis)	3 (13.0%)
RISK FACTORS FOR VENOUS ULCERS, NO. OF SUBJECTS (%)	
Obesity, defined by body mass index>30 kg/m ² No. of patients (%)*	11 (47.8%)
Chronic venous insufficiency, no. of patients (%)*	23 (100%)
Varicose veins of the lower limbs, no. of patients (%)*	18 (78.2%)
Swelling of lower extremities, no. of patients (%)*	20 (86.9%)
Patient's immobilisation, no. of patients (%)*	0
Diagnosed diabetes, no. of patients (%)*	5 (21.7%)
Concomitant failure of lymphatic vessels, no. of patients (%)*	3 (13%)

Current smokers, no. of patients (%) – according to self-reported history	2 (8.7%)
Smoking in the past, no. of patients (%) – according to self-reported history	10 (43.5%)
MEDICAL HISTORY	
Diagnosed arterial hypertension, no., (%)	15 (65.2%)
Diagnosed dyslipidaemia, no., (%)	5 (21.7%)
Diagnosed polyneuropathy	1(4.3%)
History of stroke	1 (4.3%)
History of thyroid diseases	2 (8.7%)
History of kidney failure	3 (13.0%)
Osteoarthritis	5 (21.7)
Rheumatoid arthritis	2 (8.7%)
Chronic obstructive pulmonary disease (COPD)	2 (8.7%)

Table S3. Main biochemical data of the studied group

Biochemical parameter	Normal range	End of the initial stage	End of stage 3
Erythrocyte sedimentation rate [mm]	<20 mm	24.8±19.7	20.7±14.5
C-reactive protein [mg/l]	<6	5.9±6.0	5.5±6.1
Fibrinogen [g/l]	2-4	4.1±1.2	3.7±1.2
Haemoglobin [g/dl]	12.0-16.0	13.7±1.5	13.5±1.1
Platelet count [×103/μl]	140-400	254.8±102	250±102
White blood cells [×103/μl]	4-10	7.3±1.6	6.25±1.3
Neutrophils [×103/μl]	1.50-7.0	4.57±1.2	3.5±0.8
Neutrophils [%]	45-70	61.8±7	56.1±6
Creatinine [mg/dl]	0.5-0.9	0.92±0.3	0.7±0.2
Total protein count [g/dl]	6.40-8.30	7.1±0.6	7.2±0.6

Table S4. Concentration of low-molecular phenolic compounds in flax dressings used in the three successive stages of ulceration treatment (Lenplast BIS 1, Lenplast BIS 2 and Lenplast BIS 3): free – extracted with methanol (Fraction I) and cell wall bound – hydrolysed with 2M NaOH and extracted with ethyl acetate (Fraction II)

Compound name	Lenplast BIS 1		Lenplast BIS 2		Lenplast BIS 3	
	Fraction I [μg/g]	Fraction II [μg/g]	Fraction I [μg/g]	Fraction II [μg/g]	Fraction I [μg/g]	Fraction II [μg/g]
4-hydroxy-benzoic acid	3.09 ± 0.09	6.58 ± 1.25	2.50 ± 0.04	8.37 ± 1.44	18.34 ± 0.97	10.05 ± 0.41
vanillic acid	0.90 ± 0.01	2.09 ± 0.42	0.79 ± 0.01	2.50 ± 0.24	0.30 ± 0.03	2.78 ± 0.12
vanillin	3.31 ± 0.26	11.74 ± 2.00	3.17 ± 0.14	14.04 ± 0.53	2.95 ± 0.22	16.60 ± 0.89
3, 4-dihydroxy-benzoic acid	3.15 ± 0.22	-	3.58 ± 0.01	-	3.32 ± 0.20	-
syringic acid	1.64 ± 0.10	2.26 ± 0.59	-	2.40 ± 0.12	-	2.86 ± 0.08
ferulic acid	-	4.21 ± 0.98	-	4.53 ± 1.58	-	4.37 ± 0.55
coumaric acid	-	1.42 ± 0.24	-	2.01 ± 0.66	2.22 ± 0.24	2.01 ± 0.14
syringic aldehyde	-	3.74 ± 0.95	-	4.79 ± 0.99	-	5.01 ± 0.25
aceto-vanillone	-	1.00 ± 0.25	-	1.09 ± 0.21	-	1.19 ± 0.02
ferulic acid glucoside	-	-	-	-	3.1 ± 0.2	-
caffeic acid glucoside	-	-	-	-	1.85 ± 0.42	-
coumaric acid glucoside	-	-	-	-	3.63 ± 0.44	-
SDG	-	-	-	-	67.51 ± 1.73	-

Table S5. Fatty acid content in three kinds of wound dressings measured using GC-FID as specified in Materials and Methods section

	Lenplast BIS 1 [mg/g]	Lenplast BIS 2 [mg/g]	Lenplast BIS 3 [mg/g]
Palmitic acid (C16:0)	0.316 ± 0.04	1.201 ± 0.06	0.483 ± 0.01
Stearic acid (C18:0)	0.193 ± 0.03	0.604 ± 0.03	0.272 ± 0.01
Oleic acid (C18:1)	0.122 ± 0.01	1.906 ± 0.22	0.490 ± 0.00
Linoleic acid (C18:2)	0.103 ± 0.01	6.250 ± 0.67	1.487 ± 0.00
Linolenic acid (C18:3)	0.022 ± 0.00	0.550 ± 0.16	0.069 ± 0.01

Table S6. Sterol derivative contents in three types of wound dressings measured using GC-FID as specified in Materials and Methods section

Sterol	Lenplast BIS 1	Lenplast BIS 2	Lenplast BIS 3
Campesterol	79.47 ± 0.14	86.33 ± 4.11	82.44 ± 4.21
Campestanol	5.91 ± 0.18	6.53 ± 0.85	5.97 ± 0.93
Stigmasterol	20.3 ± 2.13	17.79 ± 0.41	18.91 ± 0.81
β-sitosterol	404.59 ± 2.59	377.04 ± 4.94	376.11 ± 18.36
Avenasterol	45.57 ± 3.86	45.56 ± 1.72	42.12 ± 2.24
Cycloartenol	12.18 ± 1.33	17.27 ± 0.77	22.42 ± 3.06
4,4-Dimethylsterol	61.82 ± 1.79	62.07 ± 2.81	61.55 ± 1.48
4-Methylsterol	35.11 ± 2.52	57.62 ± 17.08	49.91 ± 0.79

Table S7. Size of wounds at the end of the initial stage (stage 0) and at the end of Lenplast BIS treatments (first to third stages). The changes in the size of the ulcers at the end of each treatment stage are expressed in cm²

Patient	Wound size [cm ²]			
	Stage 0	Stage 1	Stage 2	Stage 3
1	8.87	8.16	7.51	5.83
2	18.24	16.36	15.4	15.08
3	41.75	23.56	20.38	20.38
4	116.88	105.98	107.49	95.88
5	97.57	71.93	66.88	66.6
6	1.59	0	0	0
7	33.63	27.29	23.92	21.89
8	1.54	1.46	0.55	0.08
9	5.86	2.34	1.75	1.29
10	16.25	14.99	13.39	12.27
11	36.27	12.82	7.85	5.33
12	30.43	30.18	24.37	24.15
13	5.87	3.87	3.8	3.7
14	16.99	17.27	12.48	8.34
15	18.24	13.34	10.69	10.51
16	4.92	3.71	3.68	1.21
17	19.48	11.59	7.85	4.96
18	31.66	22.26	21.68	17.78
19	33.56	29.18	25.21	23.17
20	5.73	1.6	1.52	0.84
21	19.15	17.68	14.95	13.64
22	2.31	2.17	1.3	1.1