Supplementary Informations

Growth factors regulate phospholipid biosynthesis in human fibroblast-like synoviocytes obtained from osteoarthritic knees

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Treatment	[D9]-PC [nmol/mg]	[D4]-PE [nmol/mg]	[D4]-PE P [nmol/mg]	[D9]-SM [pmol/mg]	[D9]-LPC [pmol/mg]
control	4.31±0.84	2.74±0.50	2.78±0.53	110±20	20±7
TGF-β1	**5.86±1.16**	3.02±0.55	**2.47±0.50**	**130±20**	22±4
TGF-β1 + SB431542	**4.19±0.82**	2.56±0.46	**2.15±0.34**	120±20	22±4
IGF-1	**5.06±1.06**	2.84±0.50	2.39±0.34	**140±30**	**22±4**
IGF-1 + LY294002	5.28±1.25	2.63±0.45	2.68±0.31	120±20	24±5
IGF-1 + SCH772984	**6.07±1.51**	3.01±0.54	2.35±0.34	**190±60**	30±7
control	3.50±0.72	2.07±0.47	2.28±0.46	80±10	20±0
BMP-2	3.85±0.72	2.25±0.69	**2.36±0.41**	80±10	20±0
BMP-4	3.81±0.97	2.21±0.51	2.29±0.32	80±20	24±5
BMP-7	**4.22±0.77**	**2.38±0.58**	**2.47±0.39**	90±10	22±4

Supplementary Table 1: Effect of growth factors on the level of newly synthesized PL classes. The quantitative values obtained from stable isotope-labelled PL classes were normalized with respect to the cellular protein content and expressed as nmol/mg protein or pmol/mg protein. Data are presented as means ± SDs (n=5). Bold data correspond to the significantly altered changes being expressed as %-labelled PL as shown in Figure 1 and Table 1. PC = phosphatidylcholine; PE = phosphatidylethanolamine; PE P = phosphatidylethanolamine-based plasmalogens; SM = sphingomyelin; LPC = lysophosphatidylcholine.

PL specie	control		TGF-β1		IGF-1	
	[pmol/mg]	[% labelled PL]	[pmol/mg]	[% labelled PL]	[pmol/mg]	[% labelled PL]
PC 30:0	46±16	4.3±1.4	73±21	**6.6±1.6**	56±13	**5.3±1.3**
PC 32:0	426±105	5.7±1.2	584±200	**8.6±2.3**	477±137	**7.0±1.3**
PC 34:0	59±22	5.4±1.5	82±36	**8.4±2.4**	65±27	**6.6±1.5**
PC 32:1	148±27	5.1±0.9	267±60	**8.8±2.3**	193±24	**6.8±1.5**
PC 34:1	812±142	5.3±1.3	1189±205	**8.0±2.3**	1036±120	**7.1±2.0**
PC 36:1	208±33	3.3±0.7	255±42	**4.3±0.9**	230±26	**4.0±1.0**
PC 34:2	332±58	8.0±1.6	527±101	**12.4±2.8**	419±67	**10.3±2.3**
PC 36:2	315±27	5.2±1.4	438±64	**7.5±2.1**	379±52	**6.4±1.7**
PC 34:3	37±6	10.0±2.3	74±25	**16.6±3.9**	46±7	**12.5±2.4**
PC 36:3	210±37	7.0±1.8	309±67	**10.6±2.6**	254±72	**9.1±2.8**
PC 38:3	78±25	4.3±1.0	88±24	**5.4±1.1**	87±22	**5.6±1.2**
PC 36:4	350±122	5.9±0.7	435±145	**8.3±0.9**	428±167	**7.8±1.3**
PC 38:4	448±182	4.6±0.8	506±194	**5.9±0.8**	479±190	**5.7±0.9**
PC 40:4	35±12	6.3±1.6	39±12	**8.3±2.0**	33±9	**7.6±1.6**
PC 36:5	43±12	6.5±1.1	60±15	**9.8±1.2**	51±16	**8.9±1.3**
PC 38:5	282±93	6.5±1.2	337±105	**9.0±1.3**	302±105	**8.1±1.5**
PC 40:5	54±15	5.7±1.2	62±17	**7.6±1.4**	51±15	6.7±1.5
PC 38:6	65±18	5.5±1.1	83±19	**8.5±1.2**	68±24	**7.3±1.6**
PC 40:6	42±15	5.6±1.4	49±12	**7.6±1.4**	42±13	6.8±1.4
SM 32:1	6±1	1.3±0.2	6±0	1.5±0.2	6±1	1.5±0.3
SM 33:1	5±2	0.8±0.2	5±1	0.9±0.2	4±1	0.8±0.1
SM 34:0	5±2	0.5±0.2	6±2	0.7±0.2	7±3	0.8±0.3
SM 34:1	54±10	0.4±0.0	69±17	**0.5±0.1**	70±17	**0.5±0.1**
SM 34:2	5±1	1.4±0.2	5±1	1.5±0.3	5±1	1.6±0.4
SM 35:2	6±1	0.8±0.1	7±1	1.0±0.2	9±2	**1.2±0.1**
SM 36:1	4±2	0.3±0.1	6±1	0.4±0.1	7±2	0.5±0.1
SM 36:2	3±1	1.8±0.3	4±1	**2.4±0.4**	3±1	2.0±0.3
SM 42:1	8±3	0.3±0.1	8±2	0.3±0.1	12±2	**0.5±0.1**
SM 42:2	10±4	0.4±0.1	16±4	0.6±0.2	18±6	**0.7±0.1**

Supplementary Table 2: The effect of TGF-β1 and IGF-1 on the level of newly synthesized PL species. The quantitative values obtained for each stable isotope-labelled PL species were normalized with respect to the cellular protein content and expressed as pmol/mg protein. For each PL species the percentage of stable isotope-labelled PL from the total labelled and unlabelled PL was calculated. Data are presented as means ± SDs (n = 5). Bold data correspond to significantly elevated changes (expressed as fold increases) as shown in Figure 2 and 3. PC = phosphatidylcholine; SM = sphingomyelin.

PL specie	control		BMP-2		BMP-4		BMP-7	
	[pmol/mg]	[% labelled]	[pmol/mg]	[% labelled]	[pmol/mg]	[% labelled]	[pmol/mg]	[% labelled]
PC 30:0	31±6	3.0±0.6	36±7	3.6±0.7	36±8	3.4±0.8	40±9	3.8±0.8
PC 32:0	321±76	4.5±1.1	343±66	5.1±1.0	332±91	4.7±1.3	377±79	**5.3±0.8**
PC 34:0	39±10	3.9±1.1	52±13	**5.2±0.7**	47±17	4.7±1.9	50±12	4.9±0.7
PC 32:1	116±19	4.0±0.8	125±18	4.5±0.9	127±36	4.4±1.0	141±24	**4.8±0.7**
PC 34:1	649±130	4.4±1.0	726±115	5.0±1.2	724±168	4.9±1.3	797±100	**5.3±1.2**
PC 36:1	170±41	2.7±0.6	180±25	3.0±0.7	183±34	3.0±0.9	212±20	**3.4±0.8**
PC 34:2	261±41	6.7±1.4	281±32	7.4±1.5	287±69	7.4±1.7	315±39	**7.9±1.2**
PC 36:2	247±33	4.4±1.0	274±25	4.9±1.3	268±40	4.8±1.3	294±24	**5.2±1.2**
PC 34:3	28±6	7.9±1.2	33±5	9.3±1.5	32±7	9.0±2.0	36±7	9.7±1.4
PC 36:3	161±28	5.8±1.3	183±31	6.7±1.7	177±48	6.5±1.8	197±43	**7.0±1.5**
PC 38:3	69±20	4.0±1.0	74±20	4.3±1.1	72±20	4.2±0.8	81±23	4.6±0.8
PC 36:4	303±107	5.4±0.9	326±114	6.0±0.8	335±142	5.9±1.2	361±130	**6.3±0.8**
PC 38:4	390±151	4.1±0.8	427±169	**4.6±0.7**	424±180	4.6±0.8	462±171	**4.9±0.6**
PC 40:4	29±10	5.5±1.3	32±10	6.1±1.3	34±14	6.3±2.0	37±12	6.5±1.2
PC 36:5	39±11	6.3±1.0	44±14	6.9±1.0	44±16	7.1±1.3	47±14	**7.2±1.0**
PC 38:5	238±84	5.8±1.2	266±96	6.5±1.3	257±102	6.4±1.3	281±100	**6.8±1.2**
PC 40:5	48±12	5.3±0.8	52±21	5.7±1.6	52±19	5.8±1.5	62±21	**6.6±1.4**
PC 38:6	55±17	5.5±1.2	65±16	**6.5±1.1**	58±22	6.1±1.5	70±22	**6.6±1.1**
PC 40:6	33±9	4.9±1.0	41±14	5.9±1.6	37±12	5.8±1.4	45±14	**6.4±1.3**
SM 32:1	5±1	1.0±0.2	5±0	1.1±0.1	5±1	1.1±0.1	5±1	1.2±0.3
SM 33:1	4±0	0.7±0.1	4±1	0.7±0.1	4±1	0.7±0.2	4±1	0.7±0.1
SM 34:0	3±2	0.3±0.2	3±2	0.3±0.3	2±1	0.3±0.1	3±2	0.3±0.2
SM 34:1	38±9	0.2±0.0	41±5	0.3±0.0	39±11	0.3±0.0	44±5	0.3±0.1
SM 34:2	3±1	1.0±0.2	3±0	1.0±0.1	4±0	1.2±0.2	4±0	1.2±0.1
SM 35:2	7±2	0.8±0.2	7±1	0.9±0.2	7±1	0.9±0.3	6±1	0.8±0.2
SM 36:1	4±2	0.3±0.1	5±2	0.4±0.1	5±2	0.3±0.1	4±1	0.2±0.01
SM 36:2	3±1	1.7±0.2	2±0	1.6±0.3	3±1	1.8±0.2	3±0	1.6±0.4
SM 42:1	5±0	0.2±0.1	6±1	0.2±0.0	6±2	0.2±0.1	8±2	**0.3±0.1**
SM 42:2	6±4	0.2±0.1	6±3	0.2±0.1	8±3	0.3±0.1	8±3	0.3±0.2

Supplementary Table 3: The effect of BMPs on the level of newly synthesized PL species. The quantitative values obtained for each of the stable isotope-labelled PL species were normalized with respect to the cellular protein content and expressed as pmol/mg protein. For each PL species the percentage of stable isotope-labelled PL from the total labelled and unlabelled PL was calculated. Data are presented as means ± SDs (n = 5). Bold data correspond to the significantly elevated changes (expressed as fold increases) as shown in Figure 4. PC = phosphatidylcholine; SM = sphingomyelin.