

Cell Phenotypic Changes of Mouse Connective Tissue Fibroblasts (L-929) to Poly(Ethylene Glycol)-Based Gels

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Supporting Information

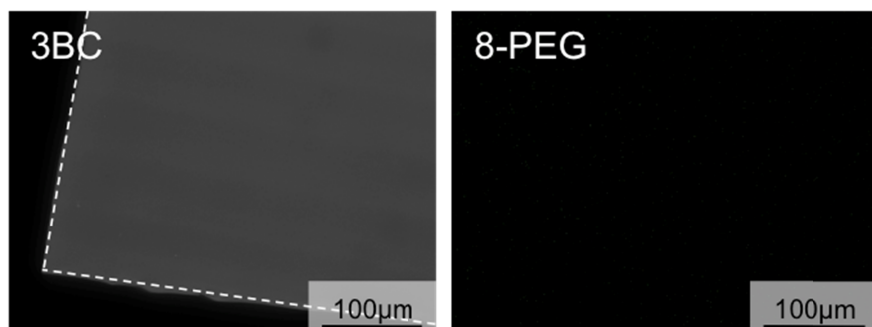


Figure S1: Fluorescence images showing albumin adsorption onto **3BC** and no albumin adsorption onto **8-PEG**. Swollen gels were incubated with a pure protein solution (no serum added) of fluorescein isothiocyanate conjugated albumin for 1h. The border of the gel is highlighted with a dashed line.

Table S1: Mass spectral characteristics of intracellular metabolites detected by GC-MS including Retention Index, Compound Spectrum, Reverse Match and corresponding p-Value.

Analyte Name	Retention Index	Compound Spectrum	Reverse Match	p-Value
AMP (5TMS)	3106.82	129:1454 169:2939 192:2145 230:2567 236:1799 243:1893 258:2131 280:1531 299:2704 315:4022 337:1729 382:2135	521	0.011
Arachidic acid (1TMS)	2474.84	117:9827 129:5682 132:5866 201:2196 369:21586	547	0.023
Aspartic acid (2TMS)	1442.58	117:4750 130:6237 202:1851 218:1997 220:1906 245:3927 262:1909 77:5839 79:13751 81:22649 89:2148 91:18099 93:15692 95:26769 101:4038 105:22138 107:19768 119:25663 123:10029 129:91499 131:18193 133:19672 135:13851 145:30123 159:25925	520	0.026
Cholesterol (1TMS)	3197.11	163:13005 173:13745 177:7827 181:11954 189:7514 203:11974 213:19868 217:12078 227:6852 233:10237 241:5706 247:28486 255:24346 275:14321 301:10753 311:5246 353:71183 368:117632 386:1623 401:1895 416:3311 443:26156 458:67091	787	0.02
Fructose (1MeOX 5TMS)	1907.96	103:3275 133:1770 189:1268 205:1669 217:4654 277:1916 307:4454 364:1380	735	0.022
Glucitol (6TMS)	1979.41	103:3203 117:2424 129:1743 133:2214 157:1584 189:2431 205:8695 217:7249 229:1928 255:1492 277:1980 291:1831 307:3968 319:13628 331:1842 345:1746 421:1640	795	0.044
Glucose-6-P (6TMS)	2259.97	127:1483 133:2821 155:1733 191:2527 204:2026 217:2877 299:5718 315:4249 387:2018	441	0.045
Glutamic acid (2TMS)	1542.72	84:9665 116:2016 130:2281 158:6681 174:19980 186:4002 201:1997 230:7160 248:2680 258:6585 276:4398	659	0.042
Glycine (3TMS)	1286.03	100:5279 248:25225 276:8953	274	0.023
Myo-Inositol (6TMS)	2133.85	103:3887 129:8017 133:9296 143:3673 159:1462	830	0.028

		175:2278 191:34891 204:25123 217:84524 243:2711 255:1556 265:20443 277:1706 291:17837 305:102375 318:62555 331:2035 343:3419 367:9473 393:6970 432:14511 507:5971		
Myristic acid (1TMS)	1854.69	117:44054 129:24249 132:20264 145:13871 241:5799 285:100937	668	0.034
Palmitic acid (1TMS)	2052.42	117:585790 129:369202 1 132:260821 145:205161 159:25873 171:31125 185:49981 201:84924 213:18944 227:24392 243:30506 269:72432 285:73660 299:19092 313:1631756 328:107850	909	0.049
Putrescine (4TMS)	1768.02	86:1202 174:9038 214:1337 117:746752 129:488822 132:339142 145:295247 159:37266 171:43868 185:71437 187:46035	898	0.036
Stearic acid (1TMS)	2250.32	201:135664 213:26047 227:34289 241:41993 243:30664 255:29425 257:55098 271:29057 297:102427 313:116169 341:2175488 356:197644	864	0.037
Tyrosine (3TMS)	1965.35	179:1170 208:1215 218:2164	321	0.017

Table S2: Mass spectral characteristics of extracellular metabolites detected by GC-MS including Retention Index, Compound Spectrum, Reverse Match and corresponding p-Value.

Analyte Name	Retention Index	Compound Spectrum	Reverse Match	p-Value
Asparagine (2TMS)	1613	100:2838 116:6922 130:3354 141:884 143:1551 159:14421 202:731 218:1855 244:1261 276:639	772	0.023
Cystine (4TMS)	2299	116:1080 130:694 132:880 146:4926 218:6853 232:1920 339:1516	577	0.040
Glutamic acid (2TMS)	1541	84:41350 130:2499 158:12078 174:33065 186:6054 201:1142 276:4995	805	0.035
Isoleucine (2TMS)	1304	100:36833 102:10012 114:8384 128:11162 130:8176 158:824842 170:8423 218:170112 232:47390 260:11352	902	0.046
Lactic acid (2TMS)	1064	88:69917 101:34425 117:1097549 129:17384 131:74123 133:142587 150:15304 190:277085 191:343050 203:13159 219:115044	748	0.015
Leucine (2TMS)	1281	100:37258 102:47736 116:16409 128:14041 130:20554 142:14445 158:1176453 218:44260 232:60912 260:20511	896	0.037
Methionine (2TMS)	1533	128:46582 160:3463 176:110013 219:11400 250:7499 293:10209	815	0.049
Ornithine (3TMS)	1774	86:3364 100:2308 114:739 130:2024 142:6456 186:8417 200:737 216:1396 244:3345 245:896 258:1099 348:3324	870	0.033
Phenylalanine (2TMS)	1649	77:2215 91:17023 100:29071 103:4685 117:3321 133:7222 160:4634 192:160913 218:225707 266:16495 294:4812	915	0.035
Proline (2TMS)	1308	100:5713 133:6846 142:548930 216:33608	881	0.033
Proline, 4-hydroxy (3TMS)	1543	100:4916 133:9465 140:69083 188:3766 214:3499 230:316816 304:11296 332:7925	916	0.002
Serine (3TMS)	1374	100:60175 103:10269 116:19233 133:25370 174:7253 188:36613 204:449306 218:258724 278:31103 306:17099	920	0.030

Threonine (3TMS)	1402	86:6385 101:55962 117:114587 160:4951 174:3871 186:3958 191:4788 203:19806 218:20710 219:187776 230:3920 291:81071 320:12103	917	0.000
Tryptophan (3TMS)	2251	100:2507 200:2764 202:72715 218:3513 230:1591 291:8903 405:702	852	0.000
Tyrosine (3TMS)	1963	179:18743 218:282450 280:37313 354:9939 382:5104	875	0.003
Urea (2TMS)	1252	78:1361 130:6343 173:7633 189:71272 204:2879	532	0.020

Table S3: Swelling degree, bulk elasticity and surface roughness of the investigated PEG-based gels. For the swelling tests, gels were weighed and immersed in cell culture medium at 37 °C for 24h. Three independent measurements were performed. Bulk elasticity and surface roughness were measured by rheology and AFM, respectively, as described previously in Kelleher et al., 2012.²²

PEG-based gel	Swelling Degree	Bulk Elasticity	Surface Roughness
	[%]	[MPa]	[nm]
PEG	293 ± 25	0.44 ± 0.05	1.37 ± 0.27
3BC	9 ± 2	1.20 ± 0.03	1.03 ± 0.47
8-PEG	285 ± 32	0.27 ± 0.05	0.78 ± 0.34