Supporting Information for:

The Influence of Composition and Morphology on Template Recognition in Molecularly Imprinted Polymers

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MD - Composition of the simulated prepolymerization mixtures

Table S1. Composition of simulated MIP and REF prepolymerization mixtures. Reference systems were simulated in the absence of bupivacaine. Each system was simulated in quintuplicate totally covering 50 ns of recorded trajectory data for each prepolymerization mixture.

	Number of molecules					Molar ratio				
System	Bupivacaine	MAA	EGDMA	AIBN	Toluene	Bupivacaine	MAA	EGDMA	AIBN[a]	Toluene[b]
S0 (+B)	10	0	557	14	891	1	0.0	55.7	1.3	1.6
S1 (+B)	10	24	557	15	930	1	2.4	55.7	1.3	1.6
S2 (+B)	10	52	557	15	974	1	5.2	55.7	1.3	1.6
S3 (+B)	10	90	557	16	1035	1	9.0	55.7	1.3	1.6
S4 (+B)	10	120	557	16	1083	1	12.0	55.7	1.3	1.6
S5 (+B)	10	144	557	16	1122	1	14.4	55.7	1.3	1.6
S6 (+B)	10	160	557	17	1147	1	16.0	55.7	1.3	1.6
S7 (+B)	10	180	557	17	1179	1	18.0	55.7	1.3	1.6
S8 (+B)	10	222	557	17	1246	1	22.2	55.7	1.3	1.6
S9 (+B)	10	462	557	20	1630	1	46.2	55.7	1.3	1.6

[a] Mol-% of the total amount of polymerizable methacrylate units present in the mixtures. [b] Times the total volume of the monomers.

Equilibration and production run data

Table S2. Thermodynamic properties for the different systems studied. Simulated pre-polymerization mixtures containing bupivacaine are denoted with (+B) and corresponding reference mixtures not containing bupivacaine with (-B).

				Energies (kcal/mol)		
System	ρ (g/cm^3)	Temp. (K)	Volume (Å^3)	E_{POT}	E_{KIN}	E_{TOT}
S0 (+B)_1	0.97	293.08 ± 1.55	69.59x69.59x69.59	10235.56 ± 123.67	21545.60 ± 113.96	31781.16 ± 171.28
S0 (+B)_2	0.98	293.13 ± 1.50	69.54x69.54x69.54	10179.13 ± 115.59	21549.24 ± 110.13	31728.37 ± 155.56
S0 (+B)_3	0.97	293.06 ± 1.52	69.65x69.65x69.66	10313.14 ± 118.64	21543.85 ± 111.97	31856.99 ± 163.22
S0 (+B)_4	0.98	293.18 ± 1.52	69.55x69.55x69.55	10208.25 ± 117.44	21552.36 ± 111.82	31760.61 ± 161.53
S0 (+B)_5	0.98	293.08 ± 1.50	69.55x69.55x69.55	10191.70 ± 121.77	21544.88 ± 110.18	31736.58 ± 162.82
S0 (-B)_1	0.97	293.03 ± 1.50	69.26x69.26x69.26	9882.53 ± 117.27	21195.33 ± 108.25	31077.86 ± 156.90
S0 (-B)_2	0.98	293.12 ± 1.54	69.16x69.17x69.17	9785.40 ± 119.12	21201.52 ± 111.59	30986.91 ± 163.19
S0 (-B)_3	0.97	293.05 ± 1.54	69.27x69.24x69.26	9891.80 ± 120.08	21196.61 ± 111.60	31088.41 ± 165.49
S0 (-B)_4	0.98	292.95 ± 1.55	69.21x69.21x69.21	9846.31 ± 119.61	21189.40 ± 111.75	31035.71 ± 164.76
S0 (-B)_5	0.98	293.13 ± 1.51	69.19x69.18x69.19	9847.41 ± 115.62	21202.67 ± 109.31	31050.08 ± 115.92
S1 (+B)_1	0.98	293.00 ± 1.47	70.22x70.22x70.22	9624.51 ± 118.77	22186.36 ± 111.61	31810.87 ± 159.11
S1 (+B)_2	0.97	293.09 ± 1.52	70.34x70.34x70.34	9736.04 ± 122.41	22193.39 ± 115.12	31929.43 ± 169.49
S1 (+B)_3	0.97	293.18 ± 1.49	70.28x70.28x70.29	9699.57 ± 119.33	22199.87 ± 113.01	31899.43 ± 163.29
S1 (+B)_4	0.97	293.14 ± 1.50	70.31x70.31x70.31	9728.02 ± 124.13	22197.03 ± 113.89	31925.05 ± 169.75
S1 (+B)_5	0.97	293.11 ± 1.47	70.28x70.28x70.28	9666.92 ± 117.72	22194.81 ± 111.37	31861.72 ± 158.51
S1 (-B)_1	0.97	293.05 ± 1.50	69.93x69.93x69.93	9332.39 ± 121.20	21844.16 ± 111.55	31176.55 ± 164.47
S1 (-B)_2	0.97	293.08 ± 1.51	69.94x69.94x69.94	9316.96 ± 121.01	21845.92 ± 112.70	31162.88 ± 165.51
S1 (-B)_3	0.97	292.97 ± 1.53	69.99x69.99x69.99	9383.77 ± 120.66	21838.22 ± 114.19	31221.99 ± 167.38
S1 (-B)_4	0.97	293.01 ± 1.49	69.94x69.94x69.94	9317.02 ± 119.01	21841.09 ± 111.28	31158.12 ± 161.04
S1 (-B)_5	0.98	293.02 ± 1.53	69.91x69.91x69.91	9296.84 ± 119.17	21841.23 ± 113.72	31138.08 ± 165.17
S2 (+B)_1	0.97	293.09 ± 1.51	71.05x71.05x71.05	9042.94 ± 124.03	22912.30 ± 118.21	31955.24 ± 174.41
S2 (+B)_2	0.97	293.08 ± 1.47	71.03x71.03x71.03	9009.96 ± 122.85	22911.39 ± 115.23	31921.34 ± 168.28
S2 (+B)_3	0.97	293.04 ± 1.46	71.03x71.03x71.03	9036.38 ± 121.45	22908.26 ± 114.47	31944.64 ± 165.48
S2 (+B)_4	0.97	293.10 ± 1.50	71.01x71.01x71.01	9035.55 ± 123.95	22912.67 ± 116.95	31948.22 ± 137.31
S2 (+B)_5	0.97	293.06 ± 1.47	71.06x71.06x71.09	9057.17 ± 125.10	22910.03 ± 114.82	31967.20 ± 169.23
S2 (-B)_1	0.97	293.02 ± 1.46	70.72x70.72x70.72	8691.07 ± 120.83	22559.76 ± 112.36	31250.83 ± 162.18
S2 (-B)_2	0.97	292.97 ± 1.47	70.69x70.69x70.69	8642.99 ± 120.33	22556.15 ± 112.97	31199.15 ± 161.68
S2 (-B)_3	0.97	293.05 ± 1.48	70.74x70.74x70.74	8703.87 ± 123.38	22562.64 ± 114.15	31266.51 ± 168.70
S2 (-B)_4	0.97	293.02 ± 1.51	70.76x70.76x70.76	8725.69 ± 125.88	22559.98 ± 116.55	31285.67 ± 174.97
S2 (-B)_5	0.97	293.11 ± 1.49	70.72x70.72x70.72	8706.48 ± 120.07	22567.35 ± 114.85	31273.82 ± 164.26

System	ρ (g/cm^3)	Temp. (K)	Volume (Å^3)	Energies (kcal/mol)		
				E_{POT}	E_{KIN}	E_{TOT}
S3 (+B)_1	0.97	293.10 ± 1.43	72.12x72.12x72.12	8229.79 ± 124.95	23919.87 ± 116.89	32149.66 ± 168.50
S3 (+B)_2	0.97	293.09 ± 1.44	72.11x72.11x72.11	8212.24 ± 124.39	23918.65 ± 117.71	32130.89 ± 168.69
S3 (+B)_3	0.97	293.05 ± 1.43	72.07x72.07x72.07	8144.35 ± 121.34	23915.62 ± 116.53	32059.97 ± 169.03
S3 (+B)_4	0.97	293.06 ± 1.48	72.13x72.13x72.13	8210.11 ± 128.66	23916.21 ± 120.95	32126.32 ± 180.96
S3 (+B)_5	0.97	293.13 ± 1.44	72.05x72.05x72.05	8131.65 ± 127.37	23921.87 ± 117.98	32053.52 ± 173.49
S3 (-B)_1	0.97	293.06 ± 1.44	71.80x71.80x71.80	7871.61 ± 124.97	23570.18 ± 115.77	31441.79 ± 168.73
S3 (-B)_2	0.97	293.06 ± 1.45	71.83x71.83x71.83	7898.09 ± 124.26	23569.77 ± 116.89	31467.86 ± 170.37
S3 (-B)_3	0.97	293.11 ± 1.44	71.84x71.84x71.84	7895.30 ± 123.45	23573.67 ± 116.09	31468.97 ± 168.02
S3 (-B)_4	0.97	293.11 ± 1.45	71.83x71.83x71.83	7886.72 ± 126.12	23574.01 ± 116.85	31460.72 ± 171.82
S3 (-B)_5	0.97	293.07 ± 1.48	71.83x71.83x71.83	7877.35 ± 127.11	23570.72 ± 119.12	31448.07 ± 177.02
S4 (+B)_1	0.96	293.05 ± 1.40	74.03x74.03x74.03	7901.32 ± 127.95	25772.13 ± 122.98	33673.45 ± 176.89
S4 (+B)_2	0.97	293.08 ± 1.42	72.93x72.92x72.94	7555.27 ± 126.04	24697.27 ± 119.63	32252.54 ± 172.67
S4 (+B)_3	0.97	293.00 ± 1.42	72.92x72.92x72x92	7520.54 ± 127.28	24690.17 ± 119.53	32210.71 ± 174.59
S4 (+B)_4	0.97	293.03 ± 1.43	72.87x72.88x72.87	7489.02 ± 127.67	24693.20 ± 120.11	32182.21 ± 175.40
S4 (+B)_5	0.97	293.01 ± 1.40	72.94x72.94x72.94	7578.07 ± 126.48	24691.44 ± 118.03	32269.51 ± 169.60
S4 (-B)_1	0.97	293.12 ± 1.42	72.60x72.60x72.60	7194.03 ± 126.54	24353.68 ± 117.97	31547.71 ± 171.37
S4 (-B)_2	0.97	293.03 ± 1.45	72.56x72.56x72.56	7142.90 ± 127.35	24346.14 ± 120.70	31489.04 ± 176.62
S4 (-B)_3	0.97	293.09 ± 1.45	72.59x72.59x72.59	7169.80 ± 125.62	24351.89 ± 120.30	31521.69 ± 174.44
S4 (-B)_4	0.97	293.04 ± 1.44	72.54x72.49x72.58	7126.98 ± 129.47	24347.03 ± 119.93	31474.01 ± 178.85
S4 (-B)_5	0.97	293.08 ± 1.44	72.60x72.60x72.60	7159.41 ± 126.03	24350.32 ± 120.04	31509.74 ± 174.29
S5 (+B)_1	0.97	293.07 ± 1.43	73.54x73.54x73.54	6988.73 ± 130.98	25325.84 ± 123.35	32314.56 ± 181.01
S5 (+B)_2	0.96	293.02 ± 1.40	73.62x73.62x73.62	7057.53 ± 131.05	25322.07 ± 120.96	32379.60 ± 177.09
S5 (+B)_3	0.97	293.13 ± 1.41	73.52x73.52x73.52	6983.36 ± 128.66	25331.83 ± 121.64	32315.19 ± 177.42
S5 (+B)_4	0.97	293.06 ± 1.42	73.60x73.60x73.60	7035.97 ± 127.00	25325.71 ± 122.77	32361.68 ± 171.92
S5 (+B)_5	0.97	293.06 ± 1.43	73.50x73.50x73.50	6941.49 ± 131.73	25325.17 ± 123.30	32266.66 ± 182.22
S5 (-B)_1	0.97	293.05 ± 1.42	73.26x73.26x73.26	6663.06 ± 127.77	24978.00 ± 120.73	31641.06 ± 174.88
S5 (-B)_2	0.97	293.08 ± 1.41	73.24x73.24x73.24	6632.78 ± 125.48	24980.32 ± 119.93	31613.10 ± 170.46
S5 (-B)_3	0.97	293.00 ± 1.42	73.23x73.23x73.23	6640.40 ± 129.43	24973.64 ± 120.93	31614.03 ± 176.90
S5 (-B)_4	0.97	293.08 ± 1.42	73.30x73.30x73.30	6697.04 ± 131.40	24980.58 ± 120.86	31677.62 ± 180.33
S5 (-B)_5	0.97	293.15 ± 1.42	73.28x73.28x73.28	6687.18 ± 129.27	24986.24 ± 120.73	31673.42 ± 177.59
S6 (+B)_1	0.97	293.03 ± 1.40	73.90x73.90x73.90	6581.01 ± 131.45	25749.24 ± 122.62	32330.26 ± 179.88
S6 (+B)_2	0.97	293.02 ± 1.41	73.99x73.99x73.99	6639.57 ± 132.79	25748.44 ± 124.15	32388.01 ± 184.59
S6 (+B)_3	0.97	293.03 ± 1.40	73.97x73.97x73.97	6638.83 ± 130.00	25749.28 ± 123.21	32388.11 ± 179.85
S6 (+B)_4	0.97	293.04 ± 1.38	73.94x73.94x73.94	6615.20 ± 131.84	25750.48 ± 121.44	32365.68 ± 178.35
S6 (+B)_5	0.97	293.00 ± 1.38	74.00x73.99x74.00	6665.94 ± 126.67	25746.99 ± 121.09	32412.93 ± 171.91
S6 (-B)_1	0.96	293.11 ± 1.39	73.75x73.75x73.75	6402.50 ± 129.34	25409.85 ± 120.75	31812.36 ± 175.91
S6 (-B)_2	0.97	293.08 ± 1.40	73.69x73.69x73.69	6327.00 ± 130.12	25406.93 ± 121.31	31733.94 ± 178.56
S6 (-B)_3	0.96	292.98 ± 139	73.71x73.71x73.71	6316.37 ± 127.95	25398.35 ± 120.38	31714.72 ± 173.55
S6 (-B)_4	0.97	293.02 ± 1.43	73.63x73.63x73.64	6248.81 ± 128.96	25402.18 ± 123.67	31651.00 ± 180.09
S6 (-B)_5	0.96	293.07 ± 1.39	73.71x73.71x73.71	6357.12 ± 126.50	25406.29 ± 120.75	31763.40 ± 173.10
S7 (+B)_1	0.97	292.96 ± 1.37	74.47x74.47x74.47	6168.88 ± 130.34	26262.25 ± 122.76	32431.12 ± 178.45
S7 (+B)_2	0.97	293.08 ± 1.39	74.47x74.47x74.47	6180.58 ± 133.26	26273.33 ± 124.21	32453.91 ± 184.24
S7 (+B)_3	0.97	293.06 ± 1.38	74.44x74.43x74.43	6131.71 ± 129.85	26271.70 ± 124.08	32403.41 ± 178.55
S7 (+B)_4	0.96	293.00 ± 1.38	74.51x74.51x74.51	6243.62 ± 134.64	26278.46 ± 126.00	32522.08 ± 186.88
S7 (+B)_5	0.97	293.01 ± 1.37	74.46x74.46x74.46	6170.99 ± 131.48	26266.62 ± 123.25	32437.61 ± 180.03
S7 (-B)_1	0.97	293.11 ± 1.38	74.19x74.19x74.19	5855.44 ± 129.44	25929.18 ± 122.49	31784.61 ± 176.54
S7 (-B)_2	0.97	293.02 ± 1.37	74.15x74.15x74.15	5795.14 ± 129.27	25921.03 ± 121.32	31716.17 ± 175.47
S7 (-B)_3	0.96	293.03 ± 1.41	74.21x74.21x74.21	5890.38 ± 129.66	25922.21 ± 125.04	31812.60 ± 180.93
S7 (-B)_4	0.96	293.02 ± 1.40	74.22x74.22x74.22	5877.98 ± 133.93	25921.55 ± 123.97	31799.54 ± 184.61
S7 (-B)_5	0.96	293.15 ± 1.38	74.23x74.23x74.23	5901.26 ± 130.65	25932.68 ± 122.49	31833.94 ± 178.38
S8 (+B)_1	0.97	293.03 ± 1.35	75.46x75.46x75.46	5197.16 ± 135.28	27357.40 ± 126.00	32554.57 ± 185.60
S8 (+B)_2	0.96	293.00 ± 1.32	75.56x75.56x75.56	5320.10 ± 132.64	27354.39 ± 123.38	32674.50 ± 176.72
S8 (+B)_3	0.97	293.09 ± 1.34	75.45x75.46x75.45	5211.16 ± 134.37	27362.61 ± 125.50	32573.76 ± 182.78
S8 (+B)_4	0.97	293.12 ± 1.36	75.47x75.47x75.47	5197.57 ± 133.87	27365.91 ± 126.59	32563.48 ± 184.48

S8 (+B)_5	0.97	293.05 ± 1.35	75.45x75.45x75.45	5152.40 ± 133.41	27359.54 ± 126.34	32511.94 ± 183.60
S8 (-B)_1	0.96	292.96 ± 1.34	75.21x75.23x75.21	4893.17 ± 133.10	27004.72 ± 123.38	31897.89 ± 197.47
S8 (-B)_2	0.96	292.99 ± 1.34	75.21x75.21x75.21	4857.22 ± 131.65	27006.83 ± 123.74	31864.05 ± 178.71
S8 (-B)_3	0.96	293.04 ± 1.37	75.31x75.31x75.31	4985.56 ± 137.00	27011.74 ± 126.28	31997.30 ± 198.78
S8 (-B)_4	0.96	293.01 ± 1.37	75.25x75.25x75.25	4934.20 ± 134.80	27008.69 ± 126.58	31942.89 ± 187.05
S8 (-B)_5	0.96	293.04 ± 1.38	75.23x75.23x75.23	4869.81 ± 134.95	27011.37 ± 126.80	31881.18 ± 186.94

				Energies (kcal/mol)		
System	ρ (g/cm^3)	Temp. (K)	Volume (Å^3)	E_{POT}	E_{KIN}	E_{TOT}
S9 (+B)_1	0.96	293.04 ± 1.25	81.06x81.05x81.05	-110.21 ± 147.77	33643.59 ± 143.47	33533.38 ± 207.56
S9 (+B)_2	0.96	293.10 ± 1.24	81.06x81.06x81.06	-94.79 ± 149.55	33650.79 ± 142.23	33556.00 ± 210.07
S9 (+B)_3	0.96	293.06 ± 1.22	81.04x81.04x81.04	-125.76 ± 150.66	33646.74 ± 139.89	33520.98 ± 204.19
S9 (+B)_4	0.96	293.07 ± 1.20	81.02x81.02x81.02	-145.72 ± 146-84	33647.86 ± 137.82	33502.14 ± 199.69
S9 (+B)_5	0.96	293.08 ± 1.23	81.06x81.06x81.06	-126.51 ± 149.52	33648.56 ± 141.07	33522.05 ± 208.38
S9 (-B)_1	0.95	293.00 ± 1.25	80.85x80.85x80.85	-384.02 ± 147.33	33293.39 ± 142.33	32909.37 ± 209.61
S9 (-B)_2	0.96	293.04 ± 1.25	80.79x80.79x80.79	-433.32 ± 148.00	33297.52 ± 141.96	32864.20 ± 203.93
S9 (-B)_3	0.96	293.03 ± 1.26	80.82x80.82x80.82	-423.68 ± 149.22	33296.68 ± 143.10	32872.99 ± 207.94
S9 (-B)_4	0.95	293.10 ± 1.24	80.84x80.84x80.84	-390.53 ± 145.14	33304.49 ± 140.34	32913.96 ± 200.25
S9 (-B)_5	0.95	293.09 ± 1.18	80.86x80.85x80.86	-373.38 ± 146.16	33302.66 ± 134.51	32929.27 ± 195.95

Hydrogen bond analyses

Table S3: Summary of hydrogen bonding events observed in the simulated prepolymerization mixtures. Simulated mixtures containing bupivacaine are denoted with (+B) and corresponding reference mixtures not containing bupivacaine with (-B). Values[a] are presented as averaged percent of total simulation time (% occupancy) per bupivacaine molecule with average lifetimes[b] and associated standard error of the mean (SEM). In the case of MAA-MAA and MAA-EGDMA values are presented per MAA- and EGDMA molecule respectively.

	Bupivacaine – MAA			
System	O-HAA	N-HAA	HAB-OAD	HAB-OAC
S1 (+B)_1	0.21 [6.50]	-	-	-
S1 (+B)_2	0.35 [5.55 ± 2.21]	3.88 [2.80]	0.22 [1.10 ± 0.01]	-
S1 (+B)_3	-	2.21 [2.60]	-	-
S1 (+B)_4	-	-	0.01 [0.60]	-
S1 (+B)_5	-	5.15 [3.20]	-	-
S2 (+B)_1	3.37 [13.85 ± 23.20]	0.60 [1.60]	0.02 [0.65 ± 0.03]	-
S2 (+B)_2	4.44 [7.30 ± 0.23]	0.55 [1.70]	-	-
S2 (+B)_3	4.03 [5.47 ± 5.15]	1.15 [1.70 ± 0.25]	2.46 [0.90 ± 0.03]	0.03 [0.55 ± 0.00]
S2 (+B)_4	27.74 [6.00 ± 2.42]	1.60 [1.90]	1.25 [0.98 ± 0.06]	0.02 [0.85 ± 0.03]
S2 (+B)_5	10.09 [4.07 ± 4.11]	5.45 [2.37 ± 0.01]	1.05 [0.83 ± 0.05]	0.03 [0.60]
S3 (+B)_1	12.68 [6.47 ± 15.42]	1.48 [2.80]	-	-
S3 (+B)_2	5.05 [7.36 ± 6.22]	10.64 [2.85 ± 0.00]	2.71 [0.96 ± 0.03]	0.08 [0.58 ± 0.00]
S3 (+B)_3	10.56 [7.31 ± 3.93]	3.24 [1.75 ± 0.63]	0.93 [0.74 ± 0.04]	0.02 [0.70 ± 0.01]
S3 (+B)_4	17.52 [8.38 ± 0.67]	7.62 [2.12 ± 0.67]	2.07 [0.90 ± 0.03]	0.02 [0.53 ± 0.00]
S3 (+B)_5	5.02 [5.62 ± 8.46]	0.00 [0.80]	-	-
S4 (+B)_1	23.70 [7.72 ± 5.26]	14.27 [2.90 ± 0.07]	6.70 [1.10 ± 0.02]	0.15 [0.70 ± 0.01]
S4 (+B)_2	5.31 [5.20 ± 3.70]	2.35 [1.67 ± 0.60]	0.62 [0.90 ± 0.02]	0.02 [0.57 ± 0.00]
S4 (+B)_3	14.40 [6.74 ± 4.96]	7.36 [2.20 ± 0.29]	1.33 [0.94 ± 0.01]	0.02 [0.60 ± 0.02]
S4 (+B)_4	17.36 [6.22 ± 3.61]	2.05 [2.40 ± 0.21]	4.58 [1.03 ± 0.03]	0.17 [0.64 ± 0.00]
S4 (+B)_5	9.57 [7.46 ± 4.56]	2.84 [1.98 ± 0.55]	1.21 [1.07 ± 0.06]	0.00 [0.53 ± 0.00]
S5 (+B)_1	23.67 [6.57 ± 2.97]	6.53 [1.95 ± 0.30]	1.93 [0.91 ± 0.04]	0.06 [0.65 ± 0.01]
S5 (+B)_2	21.55 [8.01 ± 2.37]	8.54 [2.48 ± 0.03]	3-43 [0.95 ± 0.03]	0.06 [0.66 ± 0.01]
S5 (+B)_3	15.51 [7.83 ± 1.32]	9.46 [2.48 ± 0.27]	1.19 [0.82 ± 0.05]	0.04 [0.60 ± 0.00]
S5 (+B)_4	42.78 [7.93 ± 1.88]	17.91 [2.60 ± 0.06]	7.51 [1.07 ± 0.03]	0.05 [0.53 ± 0.00]

S5 (+B)_5	39.44 [5.02 ± 2.44]	8.89 [2.38 ± 0.05]	2.38 [1.03 ± 0.03]	0.02 [0.53 ± 0.00]
S6 (+B)_1	8.63 [4.82 ± 6.72]	10.03 [2.30 ± 0.08]	4.15 [0.93 ± 0.05]	0.02 [0.56 ± 0.00]
S6 (+B)_2	19.83 [5.68 ± 3.31]	16.49 [2.43 ± 0.12]	8.48 [1.13 ± 0.05]	0.14 [0.37 ± 0.00]
S6 (+B)_3	7.99 [5.27 ± 4.04]	13.15 [2.54 ± 0.15]	1.91 [0.89 ± 0.03]	0.05 [0.62 ± 0.02]
S6 (+B)_4	20.15 [6.69 ± 3.33]	8.58 [2.68 ± 0.02]	2.58 [0.79 ± 0.03]	0.03 [0.60 ± 0.00]
S6 (+B)_5	16.72 [5.88 ± 7.12]	6.92 [1.92 ± 0.24]	3.57 [1.07 ± 0.01]	0.07 [0.59 ± 0.01]
S7 (+B)_1	11.07 [6.01 ± 3.66]	19.08 [2.30 ± 0.22]	3.20 [0.88 ± 0.04]	0.03 [0.62 ± 0.01]
S7 (+B)_2	23.80 [3.94 ± 3.16]	5.02 [2.17 ± 0.31]	0.42 [0.72 ± 0.02]	0.01 [0.53 ± 0.00]
S7 (+B)_3	12.35 [4.64 ± 4.07]	12.64 [2.20 ± 0.20]	5.70 [0.97 ± 0.04]	0.13 [0.69 ± 0.01]
S7 (+B)_4	11.91 [5.89 ± 1.75]	11.56 [2.36 ± 0.04]	2.53 [1.08 ± 0.01]	0.08 [0.65 ± 0.00]
S7 (+B)_5	16.54 [6.53 ± 3.97]	16.02 [2.26 ± 0.34]	6.72 [1.06 ± 0.02]	0.19 [0.59 ± 0.00]
S8 (+B)_1	15.79 [6.61 ± 1.83]	10.35 [2.57 ± 0.00]	0.54 [0.67 ± 0.02]	0.01 [0.50 ± 0.00]
S8 (+B)_2	26.42 [5.60 ± 3.74]	8.91 [1.47 ± 0.39]	1.44 [0.92 ± 0.04]	0.09 [0.58 ± 0.00]
S8 (+B)_3	25.51 [7.91 ± 2.30]	8.40 [2.52 ± 0.06]	1.97 [0.95 ± 0.05]	0.16 [0.72 ± 0.01]
S8 (+B)_4	31.15 [7.02 ± 3.31]	7.28 [1.87 ± 0.82]	2.70 [1.07 ± 0.03]	0.03 [0.53 ± 0.00]
S8 (+B)_5	26.53 [6.36 ± 3.19]	13.08 [2.17 ± 0.26]	0.24 [0.90 ± 0.06]	0.02 [0.57 ± 0.00]
S9 (+B)_1	43.09 [4.88 ± 2.49]	25.58 [2.46 ± 0.11]	10.99 [1.06 ± 0.02]	0.27 [0.67 ± 0.00]
S9 (+B)_2	36.46 [8.46 ± 0.91]	34.40 [8.46 ± 0.91]	14.35 [1.10 ± 0.02]	0.27 [0.64 ± 0.01]
S9 (+B)_3	32.85 [5.63 ± 2.17]	24.02 [2.05 ± 0.17]	13.39 [1.12 ± 0.02]	0.21 [0.55 ± 0.00]
S9 (+B)_4	45.30 [5.30 ± 2.83]	24.09 [2.18 ± 0.21]	12.41 [0.94 ± 0.02]	0.29 [0.64 ± 0.00]
S9 (+B)_5	35.75 [6.31 ± 3.24]	20.99 [2.23 ± 0.13]	7.56 [1.00 ± 0.02]	0.39 [0.64 ± 0.00]

	Bupivacaine-EGDMA			
System	HAB-OAE	HAB-OAF	HAB-OAI	HAB-OAJ
S0 (+B)_1	16.99 [1.05 ± 0.04]	24.62 [1.27 ± 0.04]	0.00 [0.50]	0.01 [0.65 ± 0.03]
S0 (+B)_2	16.54 [1.11 ± 0.04]	31.29 [1.22 ± 0.02]	0.00 [0.62 ± 0.03]	0.00 [0.50 ± 0.00]
S0 (+B)_3	22.98 [1.06 ± 0.03]	20.72 [1.05 ± 0.03]	0.01 [0.60 ± 0.02]	0.02 [0.54 ± 0.04]
S0 (+B)_4	18.51 [1.21 ± 0.03]	22.83 [1.23 ± 0.03]	0.03 [0.55 ± 0.00]	0.01 [0.53 ± 0.00]
S0 (+B)_5	17.97 [1.22 ± 0.03]	26.64 [1.25 ± 0.03]	0.01 [0.55 ± 0.00]	0.00 [0.55 ± 0.00]
S1 (+B)_1	26.30 [1.09 ± 0.04]	17.78 [1.26 ± 0.03]	0.00 [0.50]	0.01 [0.52 ± 0.00]
S1 (+B)_2	15.04 [1.29 ± 0.03]	27.99 [1.25 ± 0.03]	0.01 [0.50 ± 0.00]	0.05 [0.62 ± 0.01]
S1 (+B)_3	11.24 [0.98 ± 0.04]	31.15 [1.18 ± 0.04]	0.01 [0.60]	0.05 [0.52 ± 0.00]
S1 (+B)_4	23.54 [1.14 ± 0.03]	14.58 [1.22 ± 0.02]	0.00 [0.73 ± 0.04]	0.00 [0.60 ± 0.02]
S1 (+B)_5	21.08 [1.05 ± 0.04]	21.67 [1.14 ± 0.05]	0.01 [0.83 ± 0.05]	0.00 [0.50 ± 0.00]
S2 (+B)_1	24.66 [1.18 ± 0.02]	14.78 [1.10 ± 0.04]	0.01 [0.53 ± 0.00]	0.00 [0.55 ± 0.00]
S2 (+B)_2	11.92 [1.15 ± 0.04]	32.22 [1.15 ± 0.03]	0.03 [0.57 ± 0.00]	0.01 [0.50 ± 0.00]
S2 (+B)_3	19.31 [1.07 ± 0.05]	11.25 [1.05 ± 0.04]	0.01 [0.53 ± 0.00]	-
S2 (+B)_4	12.62 [0.96 ± 0.05]	19.96 [1.08 ± 0.04]	0.01 [0.57 ± 0.01]	0.03 [0.70 ± 0.01]
S2 (+B)_5	14.07 [1.11 ± 0.04]	26.72 [1.23 ± 0.04]	0.00 [0.60 ± 0.01]	0.01 [0.58 ± 0.01]
S3 (+B)_1	15.27 [1.13 ± 0.04]	23.96 [1.25 ± 0.03]	0.04 [0.05 ± 0.00]	0.00 [0.50 ± 0.00]
S3 (+B)_2	21.35 [1.24 ± 0.05]	26.59 [1.27 ± 0.04]	0.00 [0.60 ± 0.02]	0.00 [0.60]
S3 (+B)_3	14.86 [1.27 ± 0.03]	22.90 [1.32 ± 0.04]	0.01 [0.60 ± 0.01]	0.02 [0.70 ± 0.04]
S3 (+B)_4	17.41 [1.07 ± 0.05]	17.87 [1.08 ± 0.03]	0.01 [0.75 ± 0.09]	0.00 [0.60 ± 0.02]
S3 (+B)_5	18.50 [1.23 ± 0.03]	28.77 [1.30 ± 0.02]	0.03 [0.53 ± 0.00]	0.00 [0.55 ± 0.00]
S4 (+B)_1	19.67 [1.20 ± 0.03]	23.54 [1.31 ± 0.03]	0.02 [0.55 ± 0.00]	0.07 [0.57 ± 0.01]
S4 (+B)_2	18.55 [1.11 ± 0.03]	14.95 [1.14 ± 0.03]	0.01 [0.72 ± 0.05]	0.00 [0.50 ± 0.00]
S4 (+B)_3	22.78 [1.25 ± 0.03]	19.32 [1.07 ± 0.03]	0.00 [1.00 ± 0.35]	0.04 [0.51 ± 0.00]
S4 (+B)_4	11.92 [1.06 ± 0.03]	16.76 [1.10 ± 0.03]	0.01 [0.60 ± 0.00]	0.02 [0.53 ± 0.00]
S4 (+B)_5	25.33 [1.29 ± 0.04]	17.50 [1.21 ± 0.03]	0.01 [0.50 ± 0.00]	0.01 [0.55 ± 0.00]
S5 (+B)_1	11.90 [1.01 ± 0.03]	13.92 [1.10 ± 0.04]	0.00 [0.50 ± 0.00]	0.01 [0.01 ± 0.01]
S5 (+B)_2	16.40 [1.05 ± 0.03]	19.33 [1.23 ± 0.03]	0.00 [0.50]	0.01 [0.87 ± 0.03]
S5 (+B)_3	16.37 [1.11 ± 0.03]	16.02 [1.00 ± 0.03]	0.01 [0.50 ± 0.00]	0.01 [0.50 ± 0.00]
S5 (+B)_4	22.51 [1.25 ± 0.05]	16.84 [1.24 ± 0.04]	0.02 [0.53 ± 0.00]	0.00 [0.50 ± 0.00]
S5 (+B)_5	23.35 [1.18 ± 0.03]	14.45 [1.28 ± 0.06]	0.00 [0.75 ± 0.00]	0.00 [0.55 ± 0.00]
S6 (+B)_1	19.17 [1.09 ± 0.03]	16.17 [1.28 ± 0.02]	0.05 [0.53 ± 0.00]	0.00 [0.50 ± 0.00]
S6 (+B)_2	17.19 [1.18 ± 0.04]	22.59 [1.27 ± 0.02]	0.01 [0.54 ± 0.00]	0.00 [0.52 ± 0.00]

S6 (+B)_3	17.32 [1.21 ± 0.03]	22.13 [1.36 ± 0.05]	0.01 [0.53 ± 0.00]	0.01 [0.50 ± 0.00]
S6 (+B)_4	17.67 [1.24 ± 0.05]	15.77 [1.22 ± 0.04]	0.02 [0.50 ± 0.00]	0.02 [0.52 ± 0.00]
S6 (+B)_5	24.12 [1.21 ± 0.02]	11.73 [1.18 ± 0.03]	0.03 [0.54 ± 0.00]	0.03 [0.60 ± 0.01]
S7 (+B)_1	14.40 [1.24 ± 0.03]	22.23 [1.22 ± 0.03]	0.01 [0.53 ± 0.00]	0.00 [0.50 ± 0.00]
S7 (+B)_2	19.77 [1.21 ± 0.03]	12.08 [1.21 ± 0.04]	0.04 [0.50 ± 0.00]	0.00 [0.50 ± 0.00]
S7 (+B)_3	17.13 [1.08 ± 0.04]	15.27 [1.03 ± 0.03]	0.00 [0.65 ± 0.03]	0.00 [0.60]
S7 (+B)_4	16.76 [1.23 ± 0.04]	16.20 [1.11 ± 0.03]	0.01 [0.57 ± 0.01]	0.03 [0.53 ± 0.00]
S7 (+B)_5	28.40 [1.24 ± 0.03]	9.22 [1.13 ± 0.03]	0.01 [0.51 ± 0.00]	0.01 [0.53 ± 0.00]
S8 (+B)_1	16.30 [1.10 ± 0.04]	17.31 [1.10 ± 0.04]	0.00 [0.53 ± 0.00]	0.01 [0.50 ± 0.00]
S8 (+B)_2	12.77 [1.04 ± 0.05]	22.85 [1.19 ± 0.03]	0.00 [0.50]	0.00 [0.50 ± 0.00]
S8 (+B)_3	17.42 [1.19 ± 0.02]	23.46 [1.19 ± 0.03]	0.04 [0.63 ± 0.01]	0.04 [0.54 ± 0.00]
S8 (+B)_4	24.43 [1.16 ± 0.03]	16.01 [1.10 ± 0.04]	0.00 [0.60 ± 0.02]	0.01 [0.52 ± 0.00]
S8 (+B)_5	16.35 [1.15 ± 0.04]	19.83 [1.20 ± 0.05]	0.01 [0.11 ± 0.01]	0.00 [0.09 ± 0.02]
S9 (+B)_1	14.18 [1.12 ± 0.05]	9.96 [1.40 ± 0.08]	0.02 [0.50 ± 0.00]	0.00 [0.65 ± 0.03]
S9 (+B)_2	9.96 [1.17 ± 0.05]	7.39 [1.10 ± 0.08]	0.01 [0.65 ± 0.03]	0.01 [0.53 ± 0.00]
S9 (+B)_3	6.72 [1.22 ± 0.12]	12.26 [1.22 ± 0.01]	0.30 [0.50 ± 0.00]	0.01 [0.55 ± 0.00]
S9 (+B)_4	11.64 [1.21 ± 0.09]	11.71 [1.19 ± 0.04]	0.00 [0.65 ± 0.03]	0.01 [0.62 ± 0.03]
S9 (+B)_5	10.77 [1.06 ± 0.04]	22.96 [1.27 ± 0.03]	0.01 [0.65 ± 0.03]	0.00 [0.50 ± 0.0]

	EGDMA-MAA			
System	OAE-HAA	OAF-HAA	OAI-HAA	OAJ-HAA
S1 (+B)_1	1.36 [3.25 ± 0.18]	1.44 [3.59 ± 0.18]	0.01 [0.79 ± 0.01]	0.01 [0.70 ± 0.01]
S1 (+B)_2	1.42 [3.23 ± 0.20]	1.42 [3.40 ± 0.24]	0.01 [0.69 ± 0.01]	0.01 [0.71 ± 0.01]
S1 (+B)_3	1.39 [3.51 ± 0.23]	1.52 [3.68 ± 0.23]	0.01 [0.76 ± 0.01]	0.01 [0.80 ± 0.02]
S1 (+B)_4	1.49 [3.50 ± 0.20]	1.51 [3.70 ± 0.20]	0.01 [0.74 ± 0.01]	0.01 [0.74 ± 0.02]
S1 (+B)_5	1.34 [3.21 ± 0.21]	1.31 [3.28 ± 0.24]	0.01 [0.79 ± 0.02]	0.01 [0.72 ± 0.01]
S1 (-B)_1	1.66 [3.84 ± 0.23]	1.39 [3.43 ± 0.23]	0.01 [0.68 ± 0.01]	0.01 [0.70 ± 0.01]
S1 (-B)_2	1.42 [3.29 ± 0.20]	1.46 [3.54 ± 0.23]	0.01 [0.73 ± 0.01]	0.01 [0.73 ± 0.01]
S1 (-B)_3	1.63 [3.79 ± 0.17]	1.45 [3.46 ± 0.19]	0.01 [0.72 ± 0.01]	0.01 [0.76 ± 0.01]
S1 (-B)_4	1.50 [3.26 ± 0.22]	1.67 [3.50 ± 0.29]	0.01 [0.69 ± 0.01]	0.01 [0.79 ± 0.02]
S1 (-B)_5	1.30 [3.43 ± 0.21]	1.56 [3.33 ± 0.22]	0.01 [0.77 ± 0.02]	0.01 [0.70 ± 0.01]
S2 (+B)_1	3.15 [3.50 ± 0.15]	3.22 [3.48 ± 0.15]	0.02 [0.74 ± 0.01]	0.02 [0.73 ± 0.01]
S2 (+B)_2	3.07	2.92	0.02	0.02
S2 (+B)_3	3.01 [3.42 ± 0.17]	3.01 [3.53 ± 0.17]	0.02 [0.69 ± 0.01]	0.01 [0.76 ± 0.01]
S2 (+B)_4	2.85 [3.38 ± 0.16]	2.88 [3.41 ± 0.17]	0.03 [0.78 ± 0.01]	0.02 [0.73 ± 0.01]
S2 (+B)_5	2.63 [3.34 ± 0.14]	3.09 [3.35 ± 0.15]	0.02 [0.71 ± 0.01]	0.03 [0.76 ± 0.01]
S2 (-B)_1	3.15 [3.45 ± 0.15]	2.84 [3.46 ± 0.19]	0.02 [0.70 ± 0.00]	0.03 [0.77 ± 0.02]
S2 (-B)_2	2.97 [3.44 ± 0.17]	3.41 [3.49 ± 014]	0.02 [0.79 ± 0.01]	0.02 [0.76 ± 0.01]
S2 (-B)_3	2.78 [3.32 ± 0.16]	3.06 [3.53 ± 0.19]	0.02 [0.71 ± 0.00]	0.02 [0.72 ± 0.01]
S2 (-B)_4	3.05 [3.35 ± 0.15]	2.99 [3.41 ± 0.15]	0.02 [0.80 ± 0.02]	0.02 [0.72 ± 0.01]
S2 (-B)_5	2.83 [3.29 ± 0.16]	3.02 [3.42 ± 0.16]	0.02 [0.72 z 0.01]	0.02 [0.69 ± 0.01]
S3 (+B)_1	5.00	5.07	0.05	0.04
S3 (+B)_2	4.73	5.02	0.03	0.03
S3 (+B)_3	4.78	5.05	0.03	0.04
S3 (+B)_4	4.57	5.16	0.03	0.03
S3 (+B)_5	4.95	4.70	0.04	0.04
S3 (-B)_1	4.96	5.30	0.04	0.04
S3 (-B)_2	4.80	4.71	0.04	0.04
S3 (-B)_3	4.68	5.24	0.04	0.03
S3 (-B)_4	4.44	5.25	0.03	0.03
S3 (-B)_5	4.93	4.76	0.03	0.04
S4 (+B)_1	5.80	5.92	0.04	0.03
S4 (+B)_2	5.93	6.36	0.04	0.04
S4 (+B)_3	6.81	6.05	0.04	0.04
S4 (+B)_4	5.79	6.44	0.04	0.04
S4 (+B)_5	5.88	6.02	0.04	0.04
S4 (-B)_1	6.44	6.36	0.05	0.05

S4 (-B)_2	5.96	6.02	0.03	0.04
S4 (-B)_3	6.20	6.35	0.05	0.04
S4 (-B)_4	6.04	6.88	0.05	0.04
S4 (-B)_5	5.97	6.39	0.04	0.05
S5 (+B)_1	7.10	7.11	0.05	0.06
S5 (+B)_2	6.88	6.82	0.05	0.04
S5 (+B)_3	7.28	6.82	0.04	0.05
S5 (+B)_4	7.01	7.26	0.05	0.05
S5 (+B)_5	6.69	7.24	0.06	0.05
S5 (-B)_1	7.20	7.13	0.05	0.05
S5 (-B)_2	7.13	7.41	0.05	0.05
S5 (-B)_3	6.66	7.55	0.05	0.06
S5 (-B)_4	6.75	7.81	0.06	0.04
S5 (-B)_5	7.31	7.16	0.05	0.06
S6 (+B)_1	7.99	8.28	0.06	0.05
S6 (+B)_2	7.23	7.88	0.04	0.05
S6 (+B)_3	7.99	8.26	0.05	0.06
S6 (+B)_4	8.12	8.08	0.07	0.06
S6 (+B)_5	7.60	7.97	0.05	0.06
S6 (-B)_1	8.54	8.32	0.06	0.06
S6 (-B)_2	7.79	8.14	0.06	0.07
S6 (-B)_3	7.72	7.98	0.06	0.06
S6 (-B)_4	8.24	7.63	0.06	0.05
S6 (-B)_5	8.05	7.87	0.05	0.06
S7 (+B)_1	8.64	7.88	0.05	0.05
S7 (+B)_2	8.45	8.38	0.06	0.06
S7 (+B)_3	8.83	8.32	0.06	0.06
S7 (+B)_4	8.23	9.09	0.05	0.06
S7 (+B)_5	8.70	8.64	0.06	0.06
S7 (-B)_1	8.84	8.53	0.06	0.06
S7 (-B)_2	8.92	8.66	0.06	0.07
S7 (-B)_3	8.37	8.85	0.06	0.07
S7 (-B)_4	8.69	8.85	0.06	0.06
S7 (-B)_5	8.73	9.22	0.06	0.06
S8 (+B)_1	9.01	9.85	0.07	0.07
S8 (+B)_2	10.21	9.67	0.07	0.07
S8 (+B)_3	10.41	9.93	0.07	0.08
S8 (+B)_4	10.34	9.84	0.07	0.07
S8 (+B)_5	9.08	10.59	0.07	0.07
S8 (-B)_1	9.88	10.19	0.08	0.07
S8 (-B)_2	10.49	9.79	0.07	0.07
S8 (-B)_3	10.26	10.09	0.06	0.06
S8 (-B)_4	10.10	10.02	0.07	0.07
S8 (-B)_5	10.02	10.07	0.08	0.07
S9 (+B)_1	16.02	16.14	0.42	0.41
S9 (+B)_2	15.58	17.02	0.43	0.46
S9 (+B)_3	16.05	16.11	0.43	0.40
S9 (+B)_4	15.62	16.03	0.43	0.39
S9 (+B)_5	15.49	15.71	0.39	0.42
S9 (-B)_1	15.93	16.01	0.29	0.37
S9 (-B)_2	16.23	16.79	0.34	0.33
S9 (-B)_3	16.35	16.75	0.38	0.35
S9 (-B)_4	16.19	16.08	0.33	0.32
S9 (-B)_5	16.30	16.31	0.27	0.26

	MAA-MAA
System	OAD-HAA
S1 (+B)_1	4.97 [4.45 ± 0.35]
S1 (+B)_2	1.86 [3.52 ± 1.40]
S1 (+B)_3	3.19 [3.31 ± 0.56]

S1 (+B)_4	2.56 [3.59 ± 1.01]
S1 (+B)_5	6.73 [3.14 ± 0.55]
S1 (-B)_1	4.55 [3.89 ± 0.24]
S1 (-B)_2	4.12 [4.32 ± 1.04]
S1 (-B)_3	1.94 [4.78 ± 0.51]
S1 (-B)_4	0.80 [3.88 ± 0.31]
S1 (-B)_5	2.03 [3.91 ± 0.38]
S2 (+B)_1	3.72 [3.71 ± 0.49]
S2 (+B)_2	6.30 [3.60 ± 0.40]
S2 (+B)_3	7.38 [3.79 ± 0.36]
S2 (+B)_4	5.76 [3.90 ± 0.32]
S2 (+B)_5	6.51 [3.57 ± 0.36]
S2 (-B)_1	7.73 [4.01 ± 0.28]
S2 (-B)_2	3.54 [3.15 ± 0.28]
S2 (-B)_3	9.14 [3.95 ± 0.24]
S2 (-B)_4	5.69 [3.78 ± 0.45]
S2 (-B)_5	7.94 [4.04 ± 0.37]
S3 (+B)_1	7.91
S3 (+B)_2	11.05
S3 (+B)_3	10.07 [3.56 ± 0.22]
S3 (+B)_4	9.69
S3 (+B)_5	10.47
S3 (-B)_1	7.60
S3 (-B)_2	11.42 [3.29 ± 0.26]
S3 (-B)_3	10.22 [3.69 ± 0.21]
S3 (-B)_4	11.68
S3 (-B)_5	10.51
S4 (+B)_1	13.66 [3.49 ± 0.17]
S4 (+B)_2	14.50 [3.70 ± 0.16]
S4 (+B)_3	9.25 [3.31 ± 0.19]
S4 (+B)_4	13.55 [3.81 ± 0.16]
S4 (+B)_5	15.01 [3.48 ± 0.15]
S4 (-B)_1	11.85 [3.43 ± 0.18]
S4 (-B)_2	14.64 [3.50 ± 0.15]
S4 (-B)_3	14.12 [3.60 ± 0.19]
S4 (-B)_4	11.15 [3.51 ± 0.19]
S4 (-B)_5	13.67 [3.50 ± 0.20]
S5 (+B)_1	13.60 [3.53 ± 0.13]
S5 (+B)_2	17.66 [3.56 ± 0.12]
S5 (+B)_3	15.25
S5 (+B)_4	13.10
S5 (+B)_5	13.75
S5 (-B)_1	14.46 [3.56 ± 0.14]
S5 (-B)_2	15.80 [3.66 ± 0.14]
S5 (-B)_3	17.77
S5 (-B)_4	14.88
S5 (-B)_5	14.75
S6 (+B)_1	15.54
S6 (+B)_2	17.53
S6 (+B)_3	14.43
S6 (+B)_4	13.75
S6 (+B)_5	17.74
S6 (-B)_1	14.34
S6 (-B)_2	15.06
S6 (-B)_3	15.59
S6 (-B)_4	16.33

S6 (-B)_5	17.60
S7 (+B)_1	19.84
S7 (+B)_2	17.86
S7 (+B)_3	17.21
S7 (+B)_4	17.74
S7 (+B)_5	16.32
S7 (-B)_1	17.94
S7 (-B)_2	18.04
S7 (-B)_3	19.04
S7 (-B)_4	17.34
S7 (-B)_5	16.79
S8 (+B)_1	24.01
S8 (+B)_2	21.56
S8 (+B)_3	20.10
S8 (+B)_4	19.55
S8 (+B)_5	19.36
S8 (-B)_1	20.86
S8 (-B)_2	20.89
S8 (-B)_3	20.86
S8 (-B)_4	20.24
S8 (-B)_5	21.57
S9 (+B)_1	31.64
S9 (+B)_2	31.22
S9 (+B)_3	32.22
S9 (+B)_4	32.20
S9 (+B)_5	33.67
S9 (-B)_1	34.11
S9 (-B)_2	32.41
S9 (-B)_3	31.98
S9 (-B)_4	32.63
S9 (-B)_5	32.42

	Bupivacaine-Bupivacaine	
System	O-HAB	N-HAB
S0 (+B)_1	-	-
S0 (+B)_2	2.50 [2.20]	-
S0 (+B)_3	-	-
S0 (+B)_4	-	-
S0 (+B)_5	-	-
S1 (+B)_1	-	-
S1 (+B)_2	-	-
S1 (+B)_3	-	-
S1 (+B)_4	0.56 [1.90]	-
S1 (+B)_5	-	-
S2 (+B)_1	-	-
S2 (+B)_2	-	-
S2 (+B)_3	-	-
S2 (+B)_4	-	-
S2 (+B)_5	-	-
S3 (+B)_1	2.83 [2.20]	-
S3 (+B)_2	3.41 [2.10]	-
S3 (+B)_3	-	-
S3 (+B)_4	-	-
S3 (+B)_5	-	-
S4 (+B)_1	-	-
S4 (+B)_2	-	-
S4 (+B)_3	-	-
S4 (+B)_4	4.39 [2.20]	-
S4 (+B)_5	-	-
S5 (+B)_1	7.57 [2.40]	-

S5 (+B)_2	4.89 [2.20]	-
S5 (+B)_3	-	-
S5 (+B)_4	-	-
S5 (+B)_5	-	-

[a] The data obtained for a specific interaction point analyzed in a simulated system were added together and then divided by the number of analyzed molecules in that system resulting in an average percentage (% occupancy) of the total production time that an interaction point is engaged in hydrogen bonding.

[b] Average lifetimes were calculated by summarizing all lifetimes corresponding to formed hydrogen bonds at an analyzed interaction point in a simulated system and then divided by the number of hydrogen bond events in that system. Values are presented as [average lifetimes ± SEM]. For single events no SEM was calculated and for analyses involving high numbers of molecules (MAA-EGDMA and MAA-MAA) no lifetime value was calculated.

Radial distribution function analyses

Bupivacaine-MAA

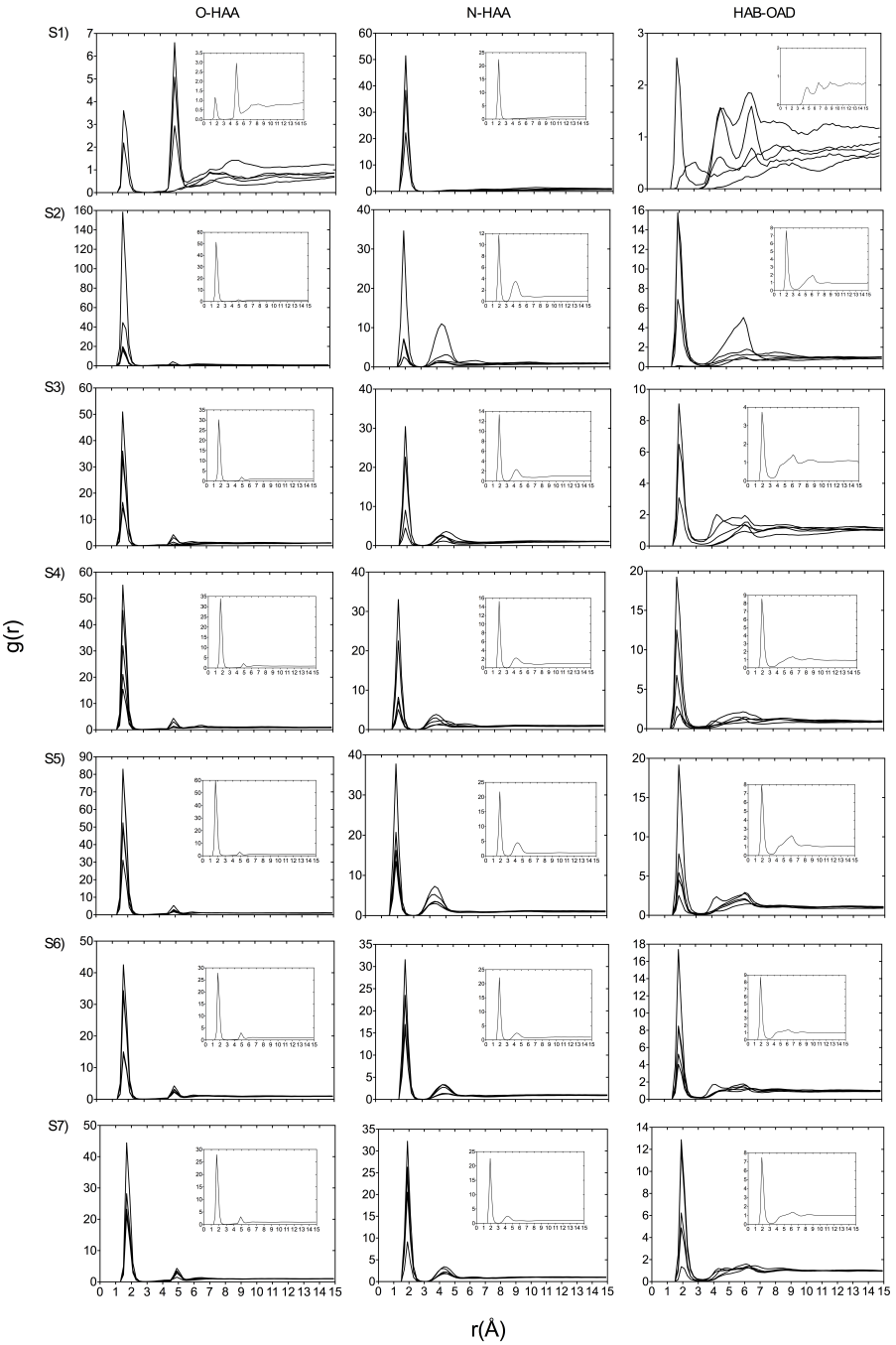

Figure S1. Results from RDF analyses for bupivacaine-MAA interactions obtained from evaluation of five simulations of the studied prepolymerization mixtures representing system S1-7 (+B). The insets show the average RDF calculated from the quadruplicates.

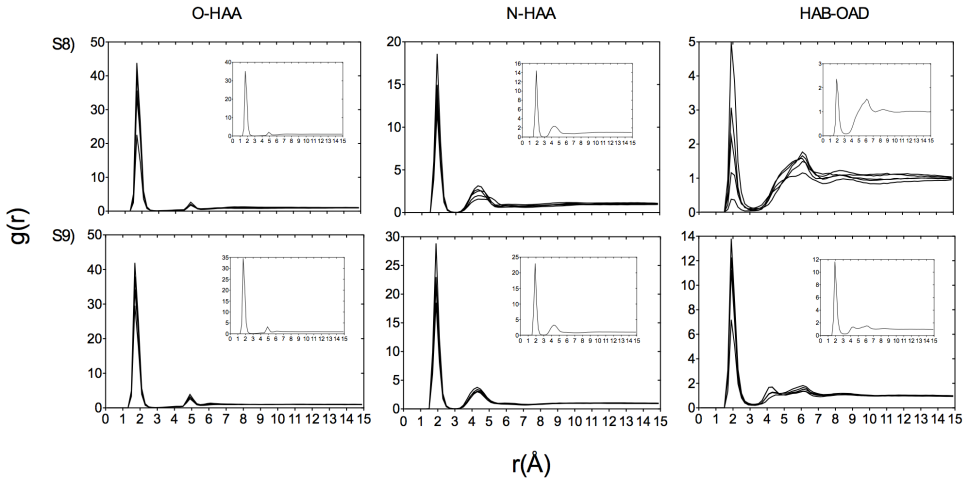

Figure S2. Results from RDF analyses for bupivacaine-MAA interactions obtained from evaluation of quadruplicate simulations of the studied prepolymerization mixtures representing S8-9 (+B). The insets show the average RDF calculated from the quadruplicates.

Bupivacaine-EGDMA

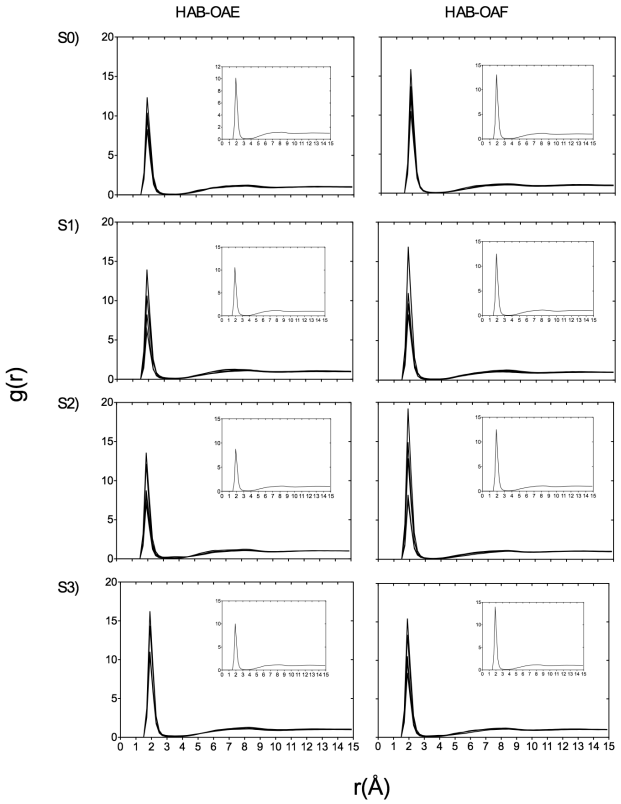

Figure S3. Results from RDF analyses for bupivacaine-EGDMA interactions obtained from evaluation of five simulations of the studied prepolymerization mixtures representing S0-3 (+B). The insets show the average RDF calculated from the quadruplicates.

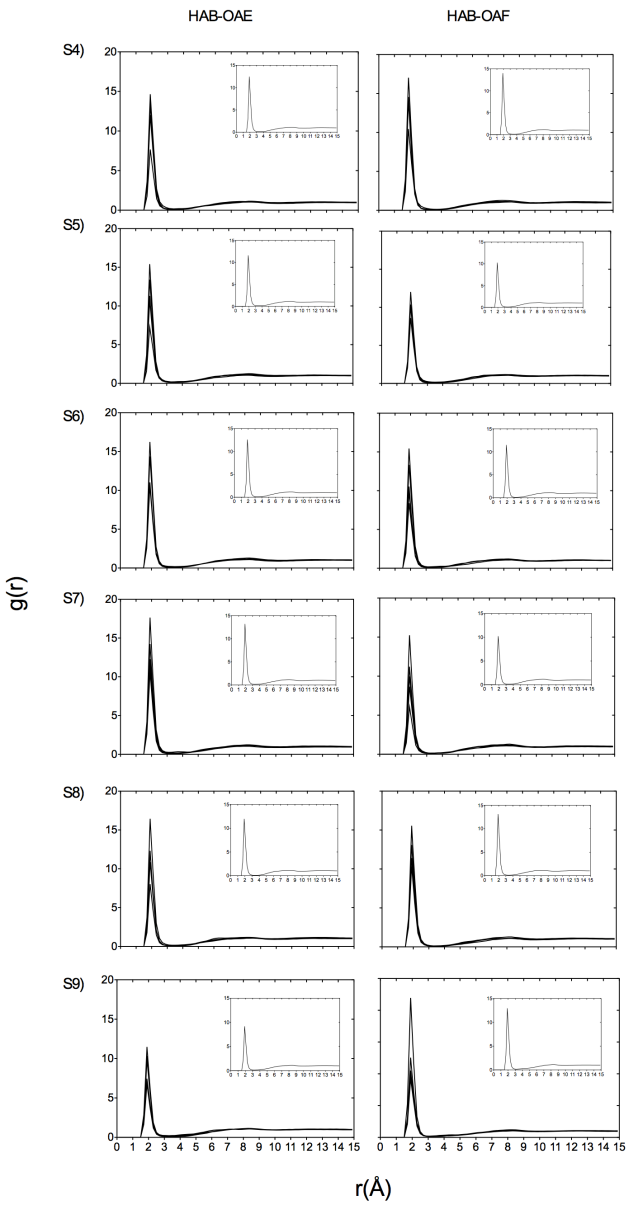

Figure S4. Results from RDF analyses for bupivacaine-EGDMA interactions obtained from evaluation of five simulations of the studied prepolymerization mixtures representing S4-9 (+B). The insets show the average RDF calculated from the quadruplicates.

MAA-MAA

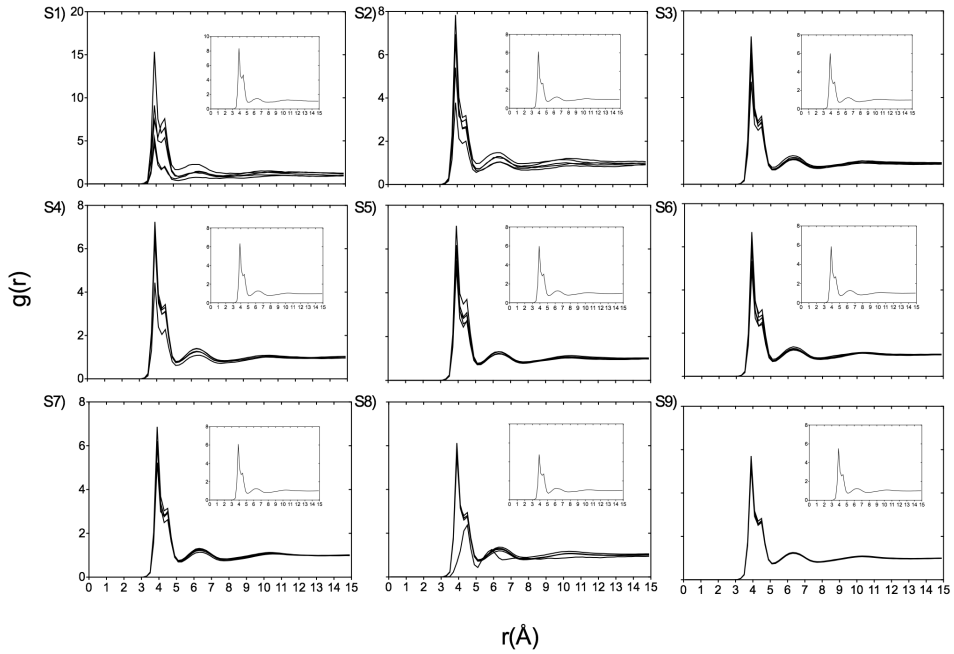

Figure S5. Results from RDF analyses of the carbonyl carbon of MAA (CAF) for self-association interactions obtained from five simulations on each studied prepolymerization mixture S1-9 (+B). The insets show the average RDF calculated from the quadruplicates.

Template self-association

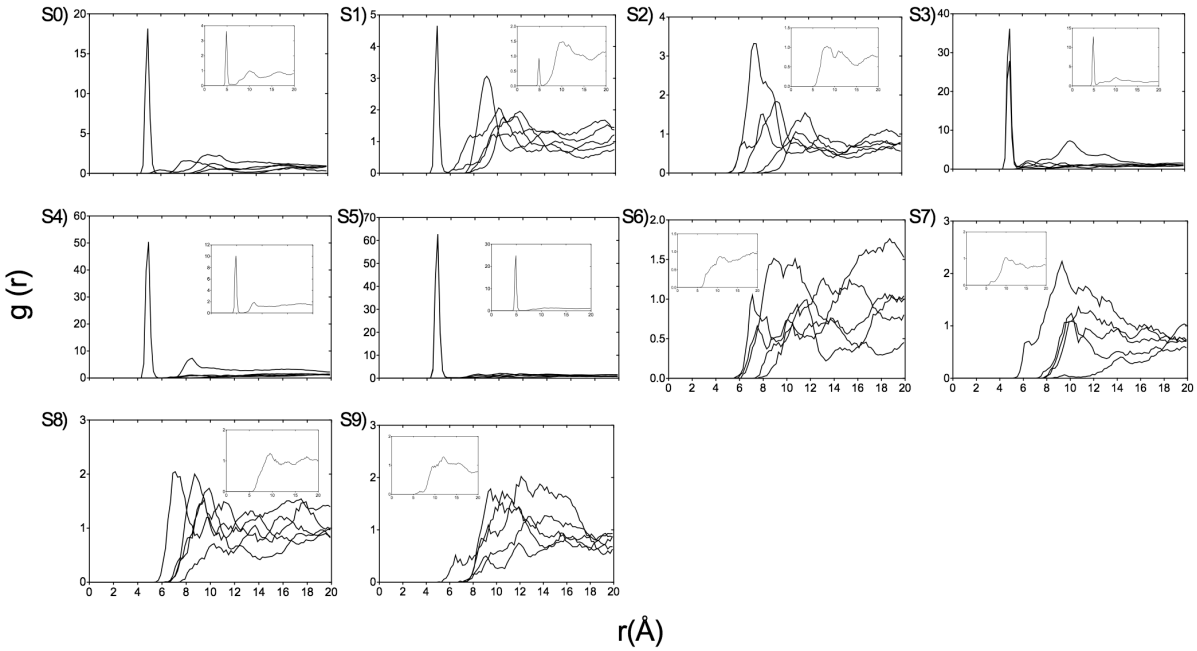

Figure S6. Results from RDF analyses of a central carbon atom of bupivacaine (C) for bupivacaine self-association interactions obtained from evaluation of the final trajectories from five simulations on each studied prepolymerization mixture. The insets show the average RDF calculated from the quadruplicates.

Atomic densities

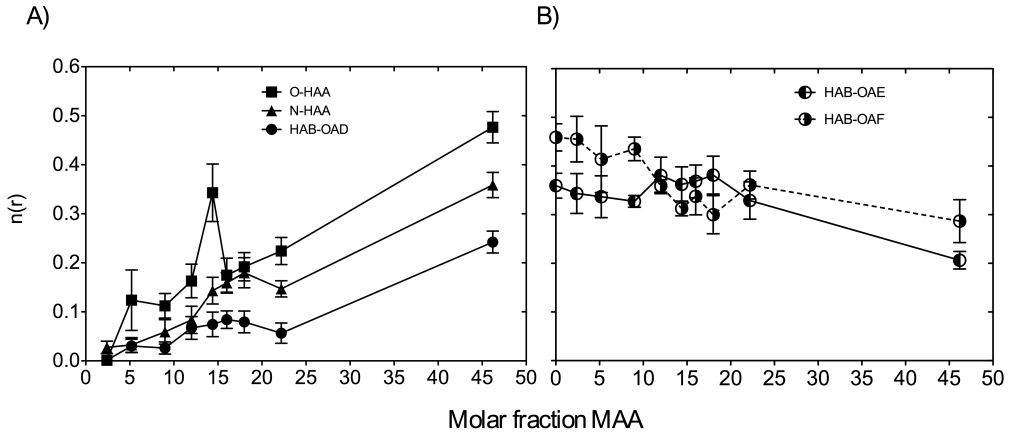

Figure S7. Atomic densities of the studied atoms of MAA (A) and EGDMA (B) around the studied atoms of bupivacaine as a function of the molar fraction MAA in the simulated MIP prepolymerization systems. Values were obtained through the numerical integration using the sum of g(r) from r=o up to the cutoff value of r=3 Å. Error bars correspond to the standard error of the mean (SEM) resulting from five simulations on each system. See chart 1 for denotation of the atoms.

BET-analysis

Table S4. Surface areas of the studied polymer series derived with the BET method together with the corresponding pore volumes.

Polymer	Surface area (m^2/g) [r][a]	Pore volume[b] (cm^3/g)
	BET	
MIP 0	542.8 ± 4.0 [1.000]	1.206078
REF 0	464.9 ± 6.5 [1.000]	1.589258
MIP 1	339.0 ± 3.6 [1.000]	0.838057
REF 1	319.0 ± 1.5 [1.000]	0.750579
MIP 2	380.7 ± 1.9 [1.000]	0.955491
REF 2	358.4 ± 1.6 [1.000]	0.900607
MIP 3	381.6 ± 3.1 [1.000]	0.959272
REF 3	275.2 ± 1.8 [1.000]	0.671729
MIP 4	357.5 ± 2.4 [1.000]	0.905193
REF 4	233.6 ± 2.1 [1.000]	0.564389
MIP 5	315.1 ± 1.9 [1.000]	0.908728
REF 5	324.0 ± 1.7 [1.000]	0.870039
MIP 6	306.8 ± 4.2 [1.000]	0.751675
REF 6	121.1 ± 0.5 [1.000]	0.319340
MIP 7	179.6 ± 0.5 [1.000]	0.580967
REF 7	220.7 ± 1.0 [1.000]	0.622254
MIP 8	284.8 ± 1.1 [1.000]	0.762485
REF 8	272.6 ± 2.2 [1.000]	0.736557
MIP 9	79.6 ± 0.3 [1.000]	0.290185
REF 9	75.0 ± 0.6 [1.000]	0.225999

[a] Areas presented as mean ± standard deviation from linear regression where r is the correlation coefficient.
[b] Single point total pore volume.

Displacement-binding study

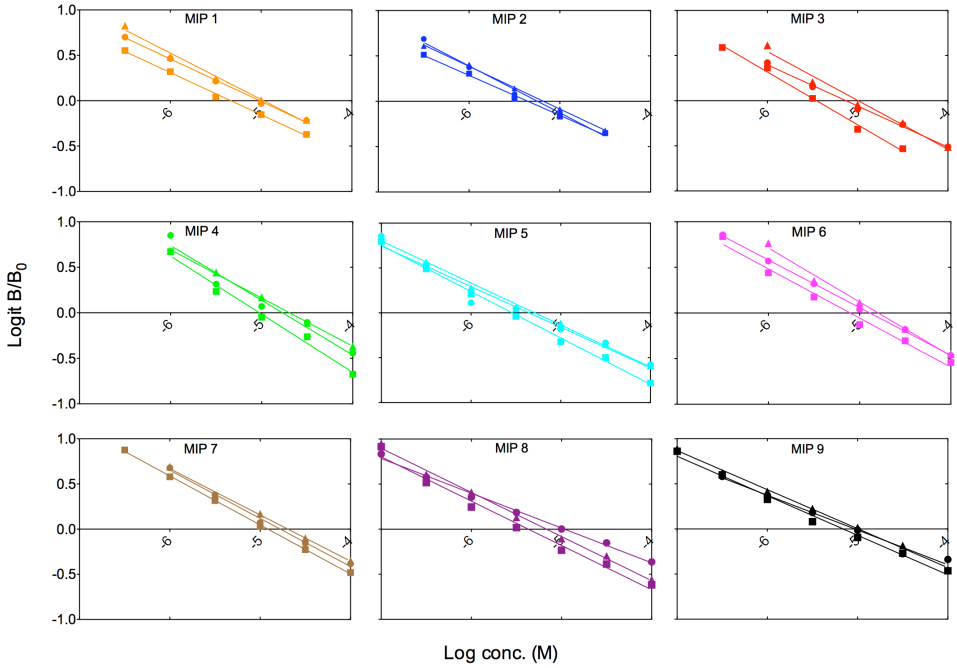

Figure S8. Results for displacement of [^{3}H]-bupivacaine in toluene. Logit B/B_0 is defined as $\log((B/B_0)/(1-B/B_0))$, where B/B_0 is the ratio of the amount of radio-labeled bupivacaine bound in the presence of competing ligand, B, to the amount bound in the absence of competing ligand, B_0. The x-axis intercept yields the IC_{50}. Squares: Bupivacaine, triangles: Ethycaine and circles: Pentycaine.