Electronic Supplementary Material (ESI) for RSC Applied Polymers.

Adenosine detection using molecularly imprinted polymer biosensor with incorporated modified thymidine monomers

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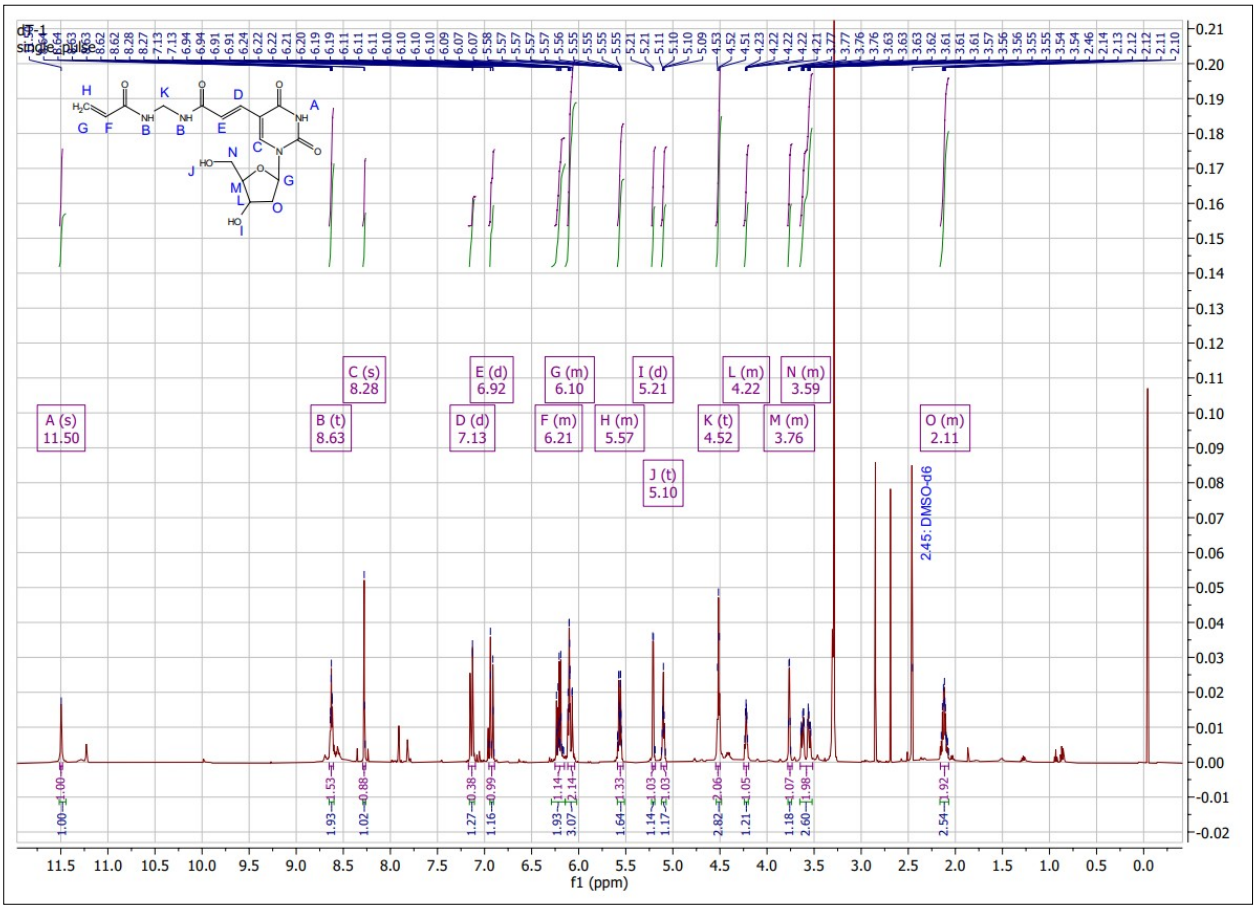

Figure S1: NMR spectra for acrylamide-dT

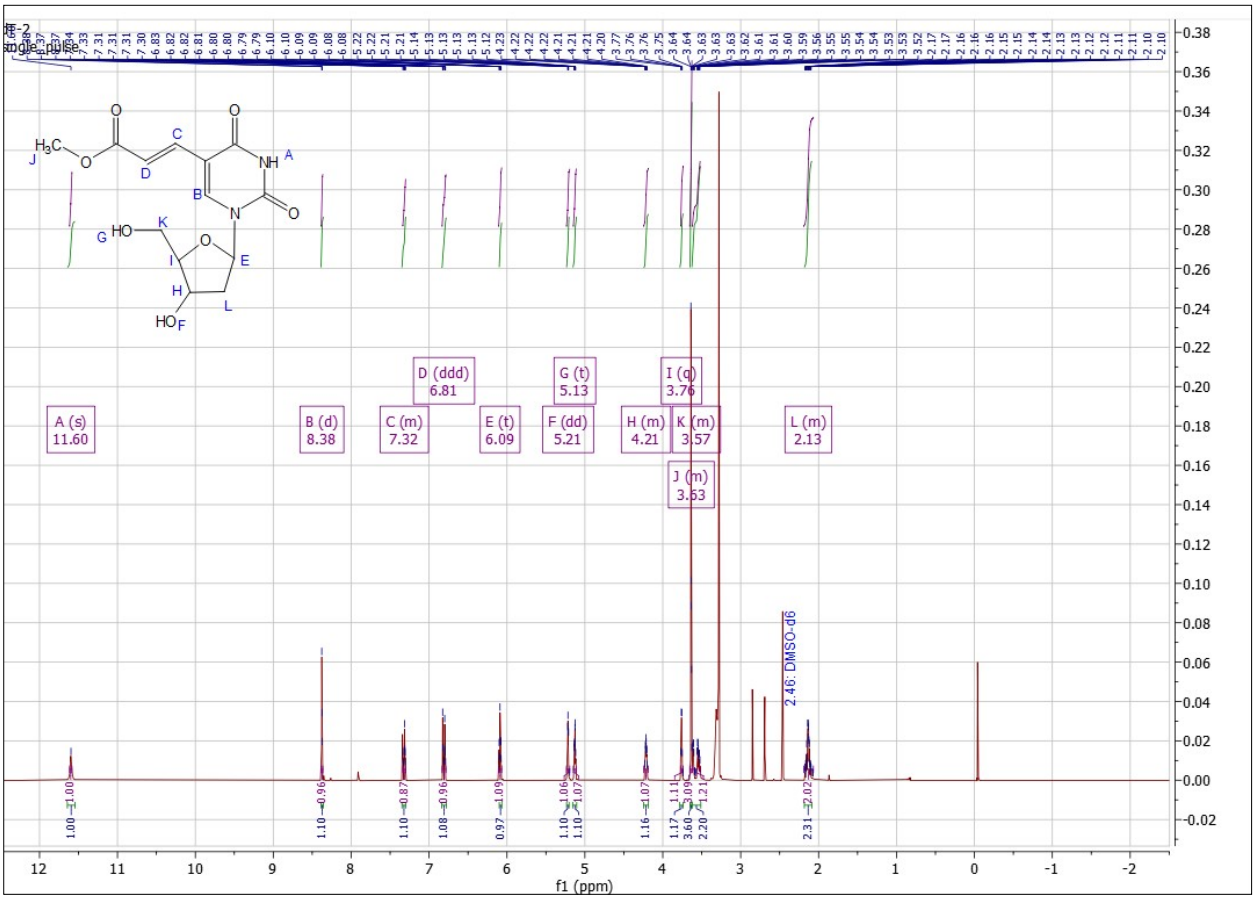

Figure S2: NMR spectra for carboxy-dT

DLS data:

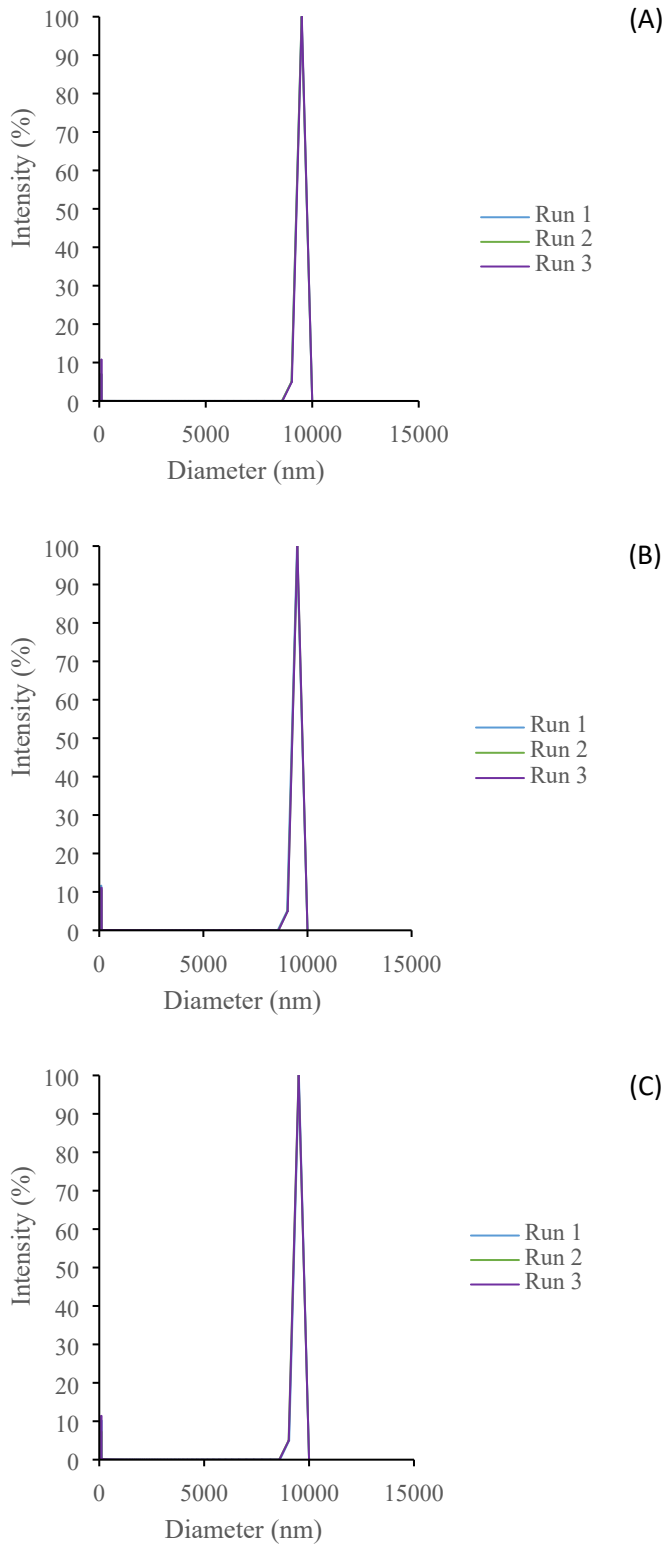

Figure S3: Particle size distribution for plain nanoMIP (A), acrylamide-dT nanoMIP (B) and carboxy-dT nanoMIP (C) synthesised using GA to leave the sugar exposed.

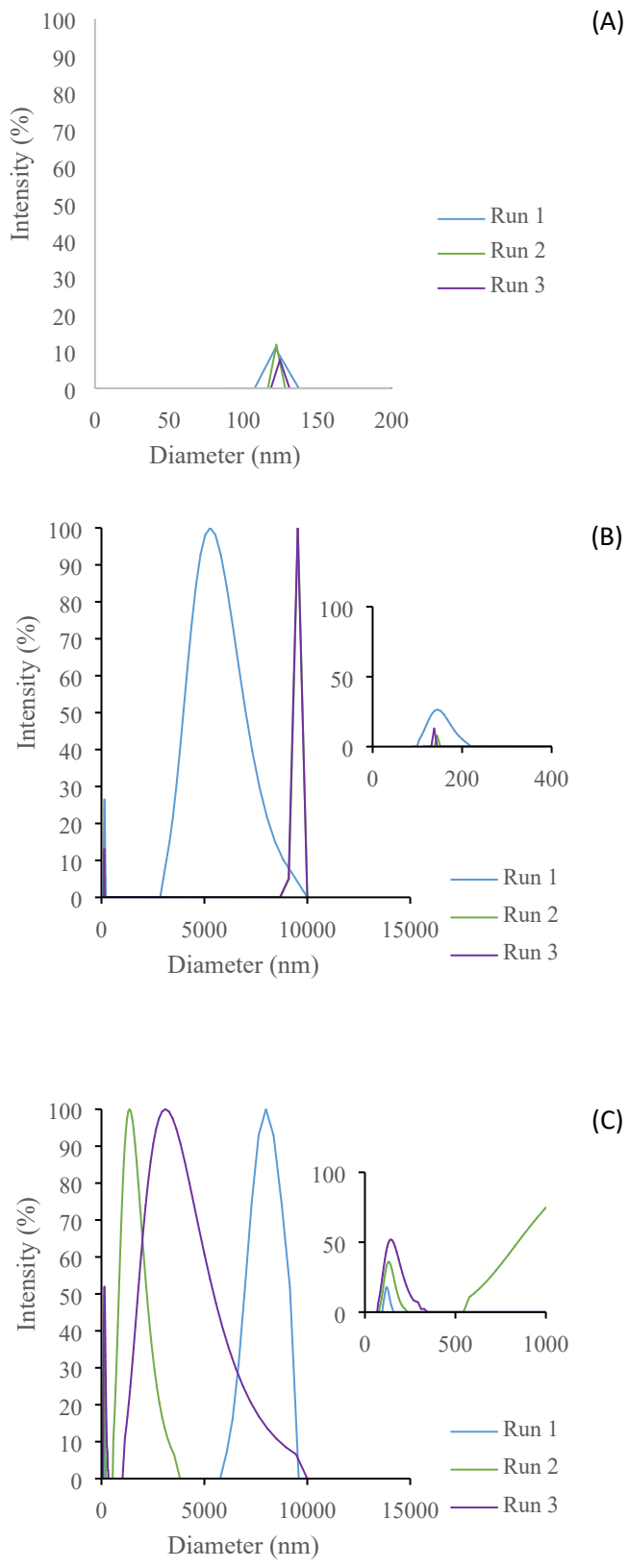

Figure S4: Particle size distribution for plain nanoMIP (A), acrylamide-dT nanoMIP (B) and carboxy-dT nanoMIP (C) synthesised using EDC/NHS chemistry to leave the base exposed.

	Selectivity Factor		
	NanoMIP	Acrylamide-dT nanoMIP	Carboxy-dT nanoMIP
Adenosine	N/A	N/A	N/A
Deoxycytidine	18.8	214.9	1639.8
Deoxyguanosine	125.7	947.5	796.2
Thymidine	9.5	2074.8	1592.4

Table S1: Calculated selectivity factors of GA

	Selectivity Factor		
	NanoMIP	Acrylamide-dT nanoMIP	Carboxy-dT nanoMIP
Adenosine	N/A	N/A	N/A
Deoxycytidine	12.94	0.48	7.03
Deoxyguanosine	2.23	1.44	32.99
Thymidine	16.09	0.06	12.98

Table S2: calculated selectivity factors of EDC/NHS

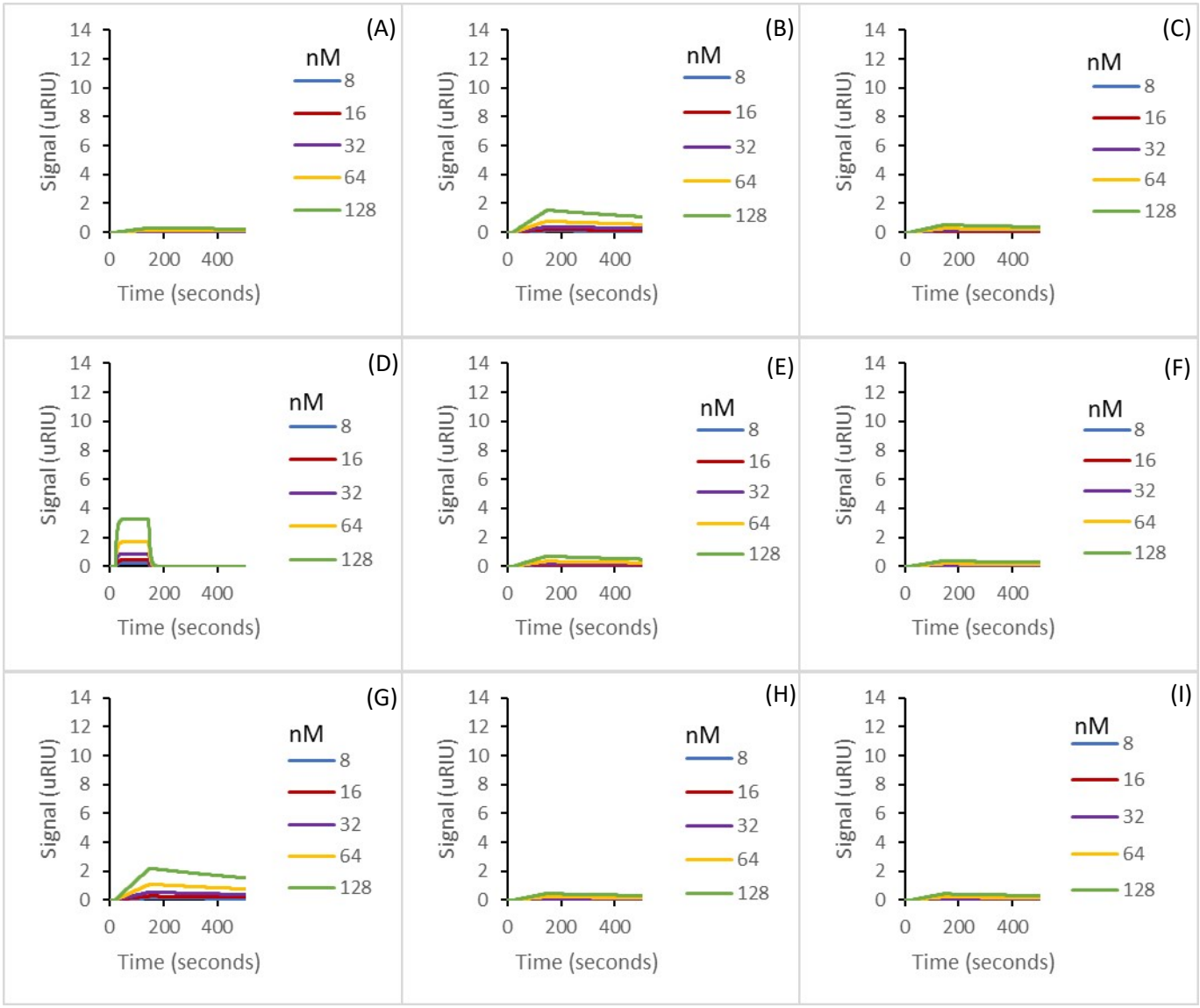

Figure S5: SPR curves illustrating the selectivity of the nanoMIPs synthesised using the GA method; deoxycytidine binding to plain nanoMIP (A), deoxyguanosine binding to plain nanoMIP (B), thymidine binding to plain nanoMIP (C), deoxycytidine binding to acrylamide-dT nanoMIP (D), deoxyguanosine binding to acrylamide-dT nanoMIP (E), thymidine binding to acrylamide-dT nanoMIP (F), deoxycytidine binding to carboxy-dT nanoMIP (H), deoxyguanosine binding to carboxy-dT (I), thymidine binding to carboxy-dT nanoMIP (J) in PBST.

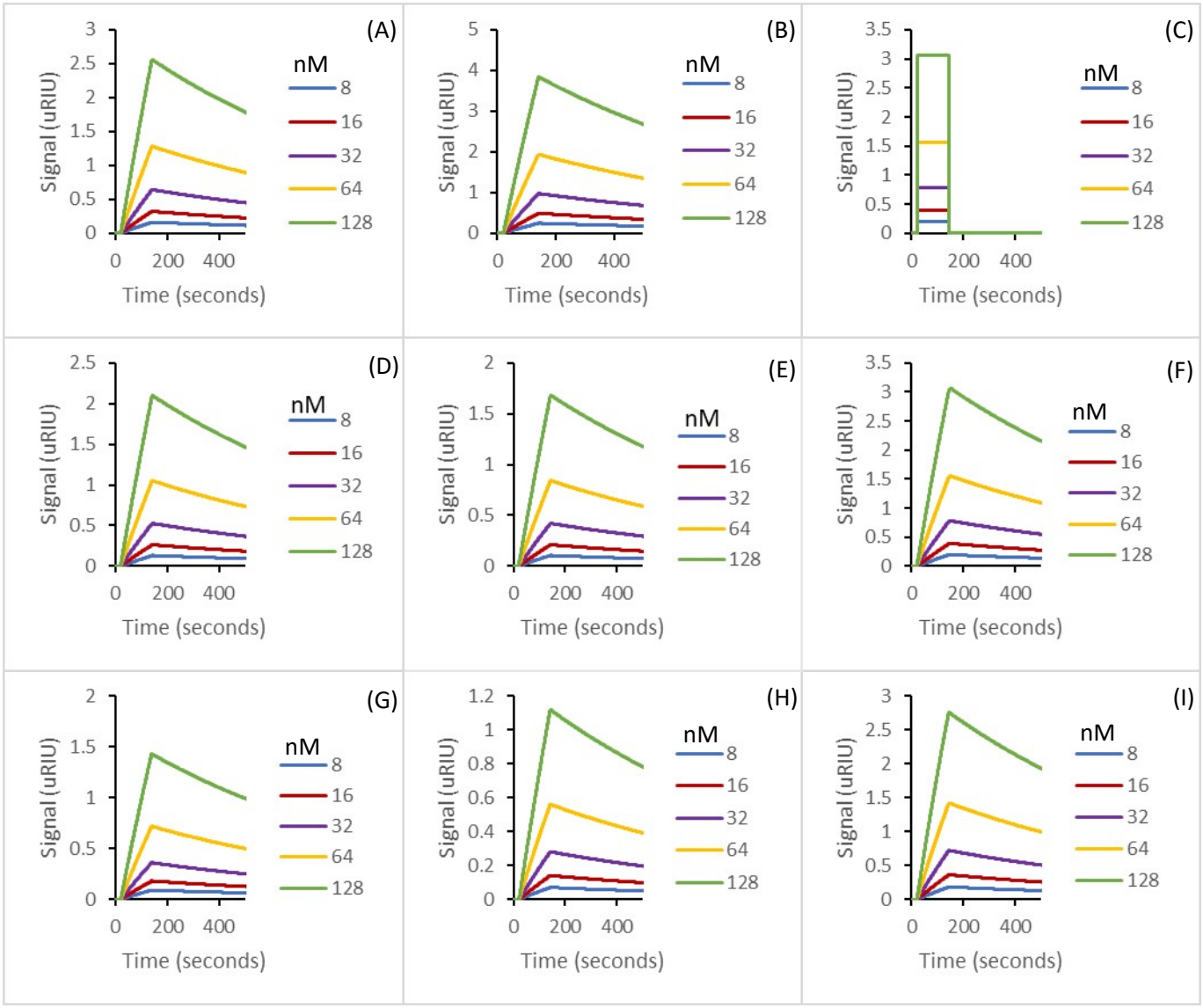

Figure S6: SPR curves illustrating the selectivity of the nanoMIPs synthesised using the EDC/NHS method; deoxycytidine binding to plain nanoMIP (A), deoxyguanosine binding to plain nanoMIP (B), thymidine binding to plain nanoMIP (C), deoxycytidine binding to acrylamide-dT nanoMIP (D), deoxyguanosine binding to acrylamide-dT nanoMIP (E), thymidine binding to acrylamide-dT nanoMIP (F), deoxycytidine binding to carboxy-dT nanoMIP (H), deoxyguanosine binding to carboxy-dT (I), thymidine binding to carboxy-dT nanoMIP (J) in PBST.

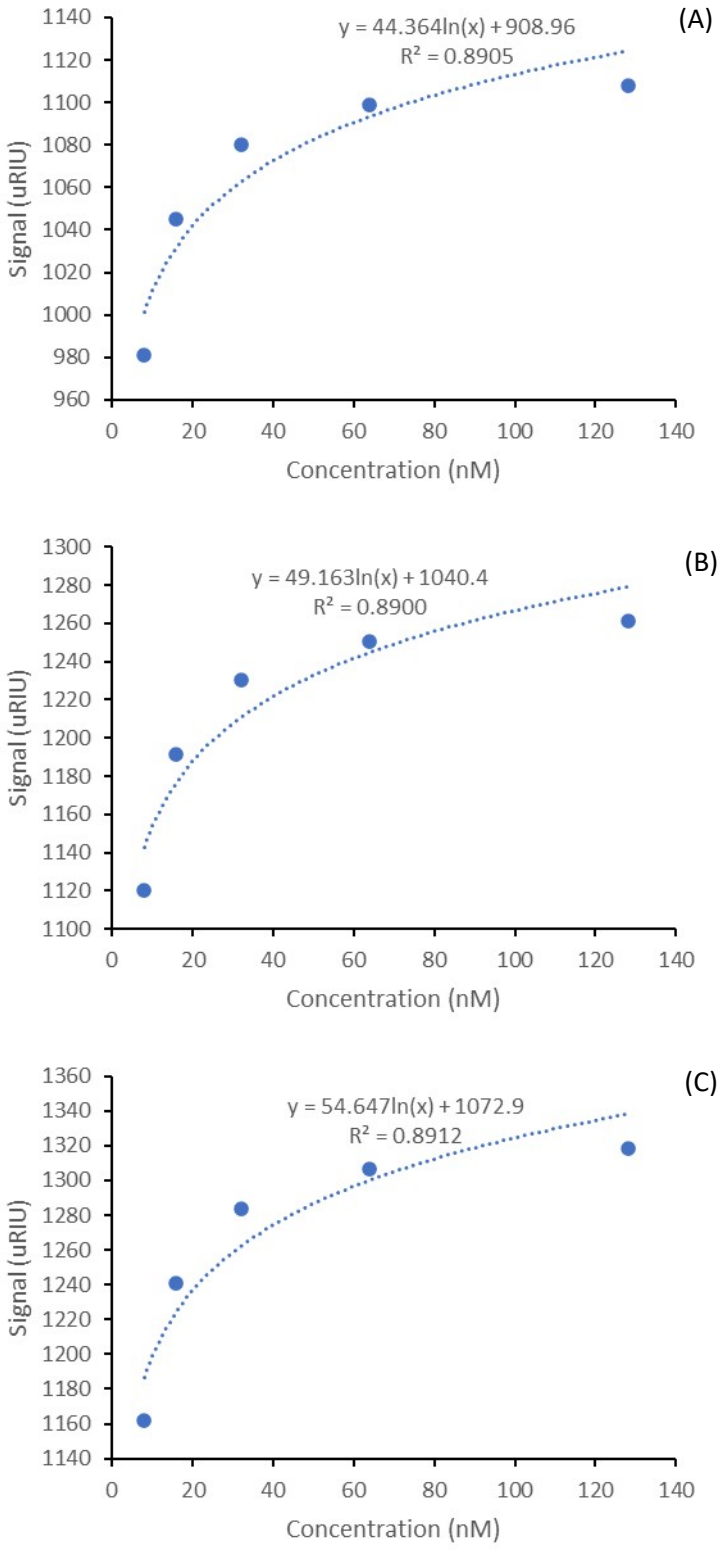

Figure S7: Illustrative calibration curves showing the relative signal against concentration for adenosine in fetal bovine serum: GA method plain nanoMIP (A), GA method acrylamide-dT nanoMIP (B) and GA method carboxy-dT nanoMIP (C).

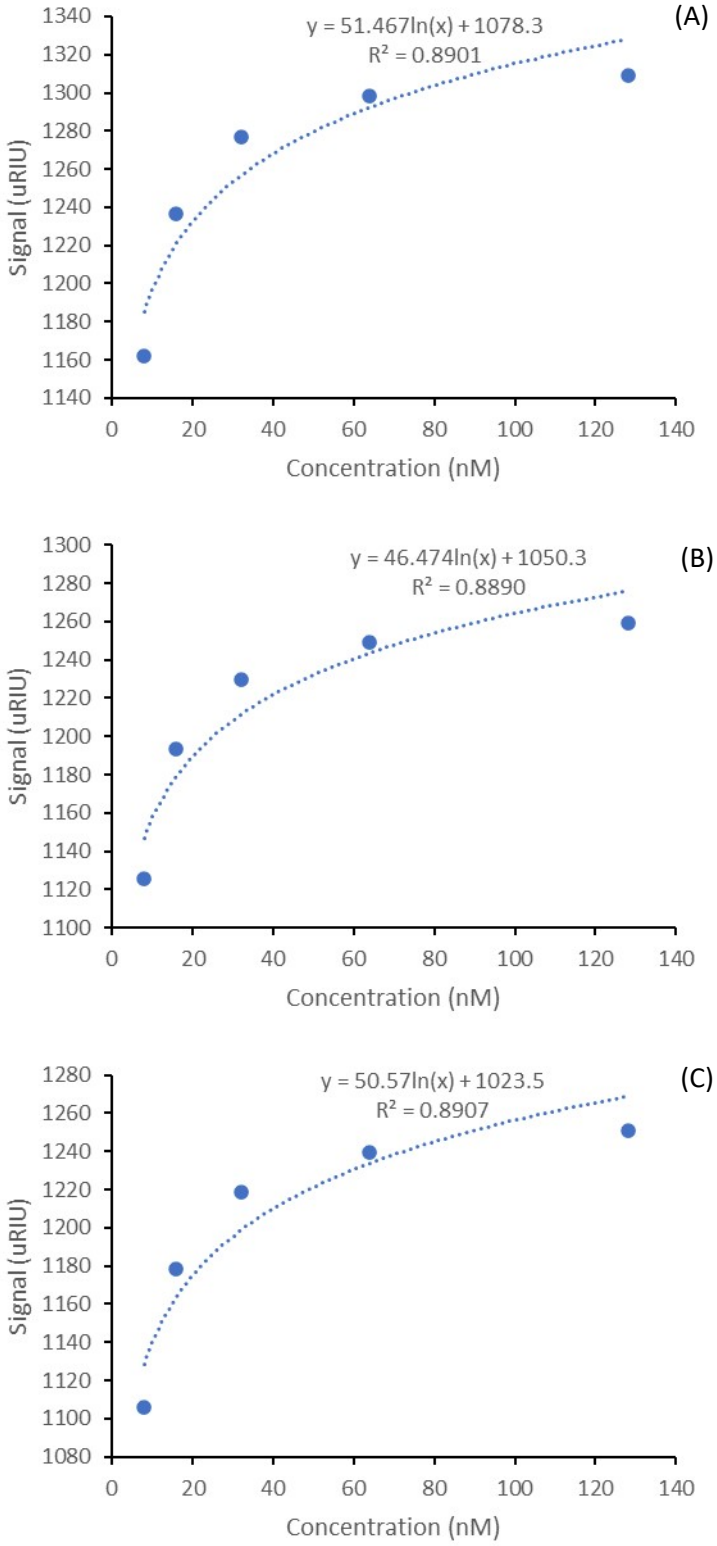

Figure S8: Illustrative calibration curves showing the relative signal against concentration for adenosine in fetal bovine serum: EDC/NHS method plain nanoMIP (A), EDC/NHS method acrylamide-dT nanoMIP (B) and EDC/NHS method carboxy-dT nanoMIP (C).