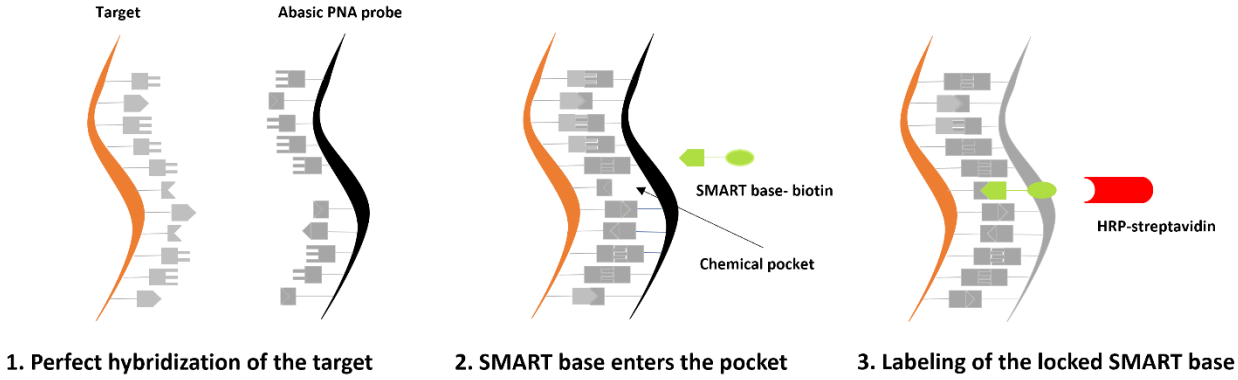

Figure S1. DCL reaction concept. Abasic PNA probe hybridizes the target (1) allowing the right SMART-base biotin to enter the chemical pocket following Watson-Crick base pairing rules (2). HRP-streptavidin binds the biotin tag for final readout (3)

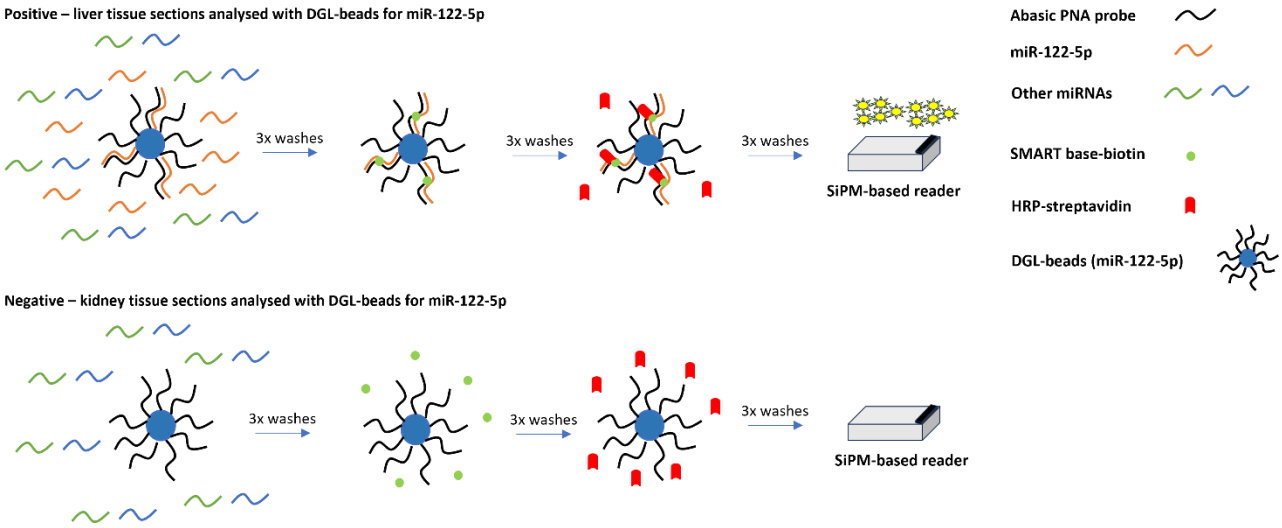

Figure S2. DCL reaction of the different conditions tested in the present work. Positive signal from DCL in liver tissue sections interrogating miR-122-5p. Negative signal from DCL in kidney tissue sections with low amount of miR-122-5p below LLoQ of SA-ODG platform.

Name	Abasic PNA probe (N-ter → C-ter)	Targets (5'-3')
DGL_miR-122	xx-CACCATT*GT*_AC*ACT*CCA	UGGAGUGUGACAAUGGUGUUUG

Table S1. DGL probe sequence and its target. xx = amino-PEG-linker; "" = propanoic acid side chain at the gamma position; "_" = abasic unit containing a propanoic acid side chain at the gamma position. The red underlined the sequence is the regions that hybridise with the DGL probe. The green is opposite to the abasic unit monomer and allows the specific incorporation of the aldehyde-modified biotinylated cytosine.*