

Supplementary Materials: Liquid Hybridization and Solid Phase Detection: A Highly Sensitive and Accurate Strategy for MicroRNA Detection in Plants and Animals

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Table S1. Difference in detections between digoxigenin DIG/Biotin/fluorescein isothiocyanate (FITC) systems.

	DIG	Biotin	FITC [31]
Detection buffer (pH 9.5)	Yes (3–5 min)	No	No
Substrate for detection	CDP Star ^a	CDP Star	Luminol ^b
Enzyme used for crosslinking	Alkaline phosphatase	Alkaline phosphatase	Horseradish peroxidase
Incubation time for detection	5 min	5 min	5 min
Exposure time	5–20 min	5–20 min	5–20 min
Duration of luminescence	24–48h	24–48 h	6 h
Supporting multiple exposure	Yes	Yes	Yes
Identification of single-base differences	Yes	Yes	Yes
Sensitivity	Dot blot	0.01 fmol	0.005 fmol
	Band blot	0.25 fmol	0.1 fmol
		0.05 fmol	0.05 fmol
		0.1 fmol	0.5 fmol
			0.01 pmol
			0.1 pmol

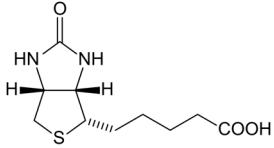
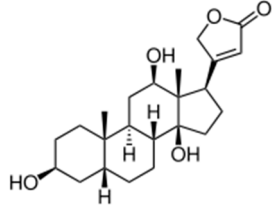
^a CDP Star: disodium 3-[4-methoxy Spiro{1,2-dioxetane-3,2'-[5'-chloro]tricyclo[3.3.1.1.3,7]decan}-4-yl] phenyl phosphate; ^b Luminol: 5-amino-2,3-dihydro-1,4-phthalazinedione.

Table S2. MicroRNA (miRNA) detection from different organisms by liquid hybridization and solid phase detection (LSHPD) strategy.

miRNAs	Species (tissues)	Sequences (5'→3')	Results
<i>Osa-miR156</i>	<i>Oryza sativa</i> -stem	UGA CAG AAG AGA GUG AGC AC	
<i>Osa-miR156</i>	<i>Oryza sativa</i> -roots	UGA CAG AAG AGA GUG AGC AC	
<i>Osa-miR156</i>	<i>Oryza sativa</i> -leaves	UGA CAG AAG AGA GUG AGC AC	
<i>miR263</i>	<i>Oryza sativa</i> -leaves	GUG GGU CUA AGG ACU AUA UUA ACC	
<i>miR557</i>	<i>Oryza sativa</i> -leaves	AUU UGU UGU AUU AGG GAA UGU CUC	
<i>miR1188</i>	<i>Oryza sativa</i> -leaves	UGG AUG UGA CAU ACU CUA GUA	
<i>miR156</i>	<i>Jatropha curcas</i> -leaves	UGA CAG AAG AGA GUG AGC AC	
<i>miR156</i>	<i>Arabidopsis thaliana</i> -leaves	UGA CAG AAG AGA GUG AGC AC	
<i>let-7a</i>	<i>Homo sapiens</i> -blood	UGA GGU AGU AGG UUG UAU AGU U	
<i>let-7a</i>	<i>Mus musculus</i> -muscle	UGA GGU AGU AGG UUG UAU AGU U	
<i>let-7a</i>	<i>Gallus domesticus</i> -blood	UGA GGU AGU AGG UUG UAU AGU U	

miR263 and *miR557* are low-abundance intronic miRNAs and *miR1188* is an abundant intronic miRNA in *Oryza sativa* [32].

Table S3. Some properties of FITC, biotin and digoxigenin.

Name	Molecular Formula	Molecular Weight	Chemical Structure
Biotin	$C_{10}H_{16}N_2O_3S$	244.31	
Digoxigenin (DIG)	$C_{23}H_{34}O_5$	390.51	
Fluorescein isothiocyanate (FITC)	$C_{21}H_{11}NO_5S$	389.382	