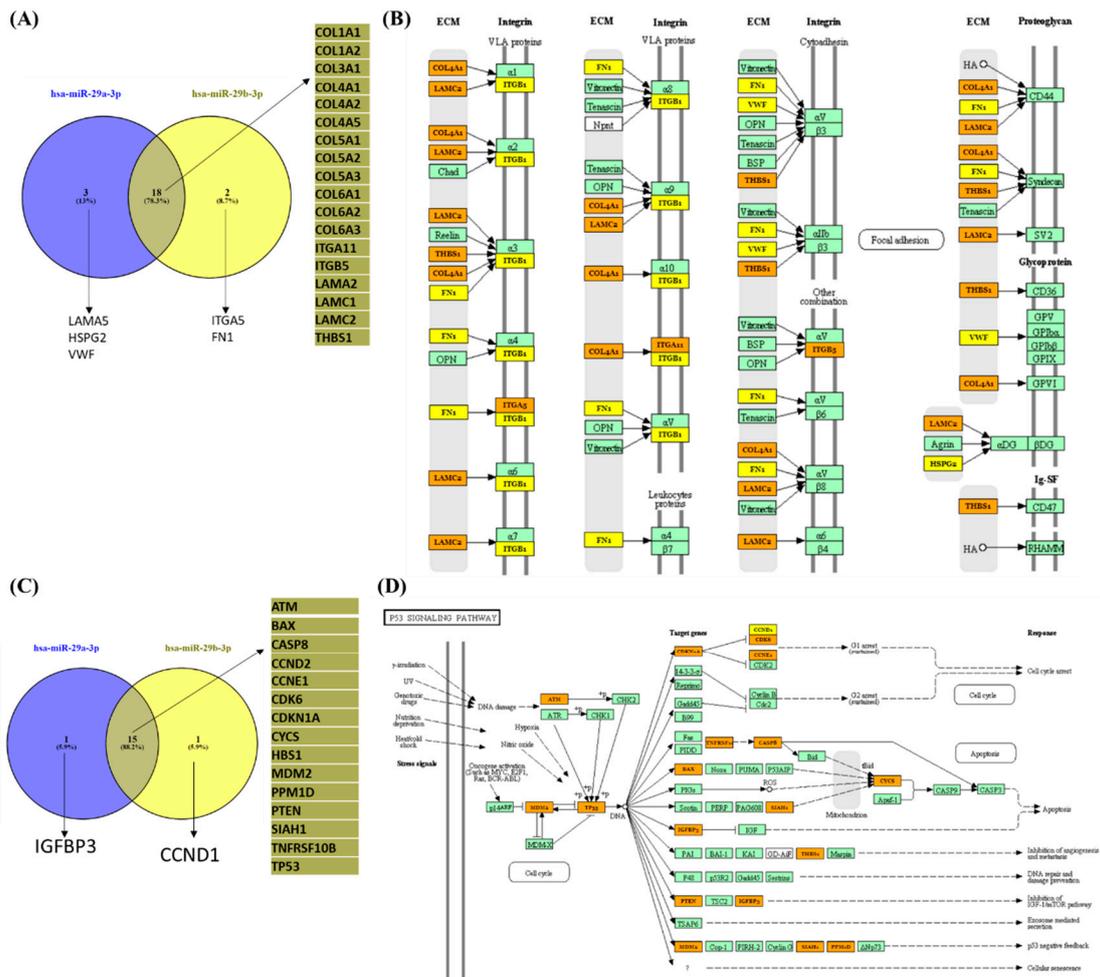


**Figure S1.** Experimental workflow for transfection procedure. TNBC cell lines were transfected with miR-29b-3p and negative control (NC) inhibitor at a final concentration of 50 nM and collected 48 hours post transfection. .



**Figure S2. The main genes targeted by miR-29a-3p and miR-29b-3p identified using DIANA-miRPath v3.0. (A)** The Venn diagram used to highlight the common genes between miR-29a-3p and mir-29b-3p related to ECM receptor interaction. **(B)** ECM receptor interaction network. **(C)** The Venn diagram used to highlight the common genes between miR-29a-3p and mir-29b-3p related to TP53 signaling. **(D)** TP53 signaling network. The targeted genes are highlighted in yellow (gene targeted by 1 selected miRNA from the list), orange (gene targeted by >1 selected miRNAs) and red (gene from the network that is not targeted by selected miRNAs).

**Table S1.** Mutational pattern for untreated BT549 and MDA-MB-231 cell lines (the NGS data were align to hg19)

Sample	Locus	Genes	Allele Frequency %	Coding	Amino Acid Change	ClinVar
MDA-MB-231	chr3:178917005	PIK3CA	33.38	c.352+40A>G		VUS
	chr4:55980239	KDR	30.88	c.798+54G>A		VUS
	chr7:140481417	BRAF	55.55	c.1391G>T	p.Gly464Val	Pathogenic/Likely pathogenic
	chr12:25398280	KRAS	60.52	c.38G>A	p.Gly13Asp	Pathogenic
	chr17:7577094	TP53	99.3	c.839G>A	p.Arg280Lys	Pathogenic/Likely pathogenic
	chr17:7579472	TP53	96.63	c.215C>G	p.Pro72Arg	Benign
	chr18:48586344	SMAD4	56.27	c.955+58C>T		VUS
BT549	chr2:212812097	ERBB4	100	c.421+58A>G		VUS
	chr5:149433595	CSF1R	32.28	c.*37AC>C		VUS
	chr5:149433597	CSF1R	32.22	c.*35C>TC		VUS
	chr11:108236264	ATM	32.67	c.*29C>G		Likely benign
	chr13:28610183	FLT3	100	c.1310-3T>C		VUS
	chr17:7577528	TP53	99.94	c.747G>C	p.Arg249Ser	VUS
	chr17:7577533	TP53	100	c.747delG	p.Arg249SerfsTer96	VUS