

Table 1 Suppl. List of GenBank accession numbers of *MIR172* homologs isolated from *Brassica*.

Name	GenBank ID	Name	GenBank ID
<i>Bra1_MIR172a</i>	KC118966	<i>Bol2_MIR172b</i>	JX041863
<i>Bra2_MIR172a</i>	KC118967	<i>Bol3_MIR172b</i>	JX041864
<i>Bju1_MIR172a</i>	KC118968	<i>Bra1_MIR172d</i>	JX041865
<i>Bni1_MIR172a</i>	KC118969	<i>Bju1_MIR172d</i>	JX041866
<i>Bni2_MIR172a</i>	KC118970	<i>Bni1_MIR172d</i>	JX041867
<i>Bna1_MIR172a</i>	KC118971	<i>Bna1_MIR172d</i>	JX041868
<i>Bca1_MIR172a</i>	KC118972	<i>Bna2_MIR172d</i>	JX041869
<i>Bca2_MIR172a</i>	KC118973	<i>Bca1_MIR172d</i>	JX041870
<i>Bca3_MIR172a</i>	KC118974	<i>Bca2_MIR172d</i>	JX041871
<i>Bol1_MIR172a</i>	KC118975	<i>Bol1_MIR172d</i>	JX041872
<i>Bra1_MIR172b</i>	JX041851	<i>Bol2_MIR172d</i>	JX041873
<i>Bra2_MIR172b</i>	JX041852	<i>Bra1_MIR172e</i>	JX041874
<i>Bju1_MIR172b</i>	JX041853	<i>Bra2_MIR172e</i>	JX041875
<i>Bju2_MIR172b</i>	JX041854	<i>Bra3_MIR172e</i>	JX041876
<i>Bni1_MIR172b</i>	JX041855	<i>Bju1_MIR172e</i>	JX041877
<i>Bni2_MIR172b</i>	JX041856	<i>Bju2_MIR172e</i>	JX041878
<i>Bni3_MIR172b</i>	JX041857	<i>Bna1_MIR172e</i>	JX041879
<i>Bni4_MIR172b</i>	JX041858	<i>Bna2_MIR172e</i>	JX041880
<i>Bna1_MIR172b</i>	JX041859	<i>Bca1_MIR172e</i>	JX041881
<i>Bca1_MIR172b</i>	JX041860	<i>Bca2_MIR172e</i>	JX041882
<i>Bca2_MIR172b</i>	JX041861	<i>Bol1_MIR172e</i>	JX041883
<i>Bol1_MIR172b</i>	JX041862	<i>Bol2_MIR172e</i>	JX041884

Table 2 Suppl. Pairwise sequence similarity between *MIR172* isolated from *Brassica* species.

MIR172a													
	Bra1_MIR172a	Bra2_MIR172a	Bju1_MIR172a	Bni1_MIR172a	Bni2_MIR172a	Bna1_MIR172a	Bca1_MIR172a	Bca2_MIR172a	Bca3_MIR172a				
Bra2_MIR172a	0.689												
Bju1_MIR172a	0.836	0.727											
Bni1_MIR172a	0.835	0.730	0.992										
Bni2_MIR172a	0.706	0.832	0.746	0.743									
Bna1_MIR172a	0.701	0.956	0.740	0.742	0.838								
Bca1_MIR172a	0.836	0.725	0.991	0.992	0.742	0.739							
Bca2_MIR172a	0.928	0.706	0.856	0.856	0.718	0.718	0.858						
Bca3_MIR172a	0.706	0.832	0.746	0.743	1.000	0.838	0.742	0.718					
Bol1_MIR172a	0.702	0.963	0.742	0.743	0.845	0.987	0.740	0.719	0.845				

MIR172b													
	Bra1_MIR172b	Bra2_MIR172b	Bju1_MIR172b	Bju2_MIR172b	Bni1_MIR172b	Bni2_MIR172b	Bni3_MIR172b	Bni4_MIR172b	Bna1_MIR172b	Bca2_MIR172b	Bca3_MIR172b	Bol1_MIR172b	Bol2_MIR172b
Bra2_MIR172b	0.995												
Bju1_MIR172b	0.639	0.642											
Bju2_MIR172b	0.994	0.992	0.641										
Bni1_MIR172b	0.676	0.678	0.829	0.677									
Bni2_MIR172b	0.650	0.653	0.896	0.651	0.921								
Bni3_MIR172b	0.638	0.641	0.996	0.639	0.829	0.896							
Bni4_MIR172b	0.656	0.657	0.604	0.657	0.626	0.615	0.604						
Bna1_MIR172b	0.995	0.994	0.640	0.992	0.675	0.651	0.639	0.654					
Bca1_MIR172b	0.836	0.835	0.655	0.836	0.698	0.663	0.654	0.673	0.835				
Bca2_MIR172b	0.644	0.646	0.975	0.645	0.829	0.903	0.974	0.601	0.644	0.648			
Bol1_MIR172b	0.652	0.654	0.598	0.654	0.621	0.611	0.597	0.966	0.650	0.670	0.596		
Bol2_MIR172b	0.961	0.960	0.645	0.959	0.675	0.658	0.644	0.650	0.960	0.836	0.650	0.648	
Bol3_MIR172b	0.655	0.658	0.797	0.653	0.758	0.801	0.795	0.621	0.654	0.662	0.800	0.618	0.661

MIR172d									
	Bra1_MIR172d	Bju1_MIR172d	Bni1_MIR172d	Bna1_MIR172d	Bna2_MIR172d	Bca1_MIR172d	Bca2_MIR172d	Bol1_MIR172d	
Bju1_MIR172d	0.931								
Bni1_MIR172d	0.930	0.994							
Bna1_MIR172d	0.996	0.931	0.930						
Bna2_MIR172d	0.967	0.935	0.933	0.963					
Bca1_MIR172d	0.933	0.994	0.993	0.933	0.936				
Bca2_MIR172d	0.977	0.926	0.925	0.977	0.986	0.928			
Bol1_MIR172d	0.974	0.940	0.938	0.970	0.986	0.942	0.975		
Bol2_MIR172d	0.972	0.931	0.930	0.968	0.994	0.933	0.991	0.984	

MIR172e										
	Bra1_MIR172e	Bra2_MIR172e	Bra3_MIR172e	Bju1_MIR172e	Bju2_MIR172e	Bna1_MIR172e	Bna2_MIR172e	Bca1_MIR172e	Bca2_MIR172e	Bol1_MIR172e

<i>Bra2_MIR172e</i>	0.987									
<i>Bra3_MIR172e</i>	0.993	0.990								
<i>Bju1_MIR172e</i>	0.926	0.928	0.923							
<i>Bju2_MIR172e</i>	0.920	0.922	0.916	0.990						
<i>Bna1_MIR172e</i>	0.904	0.910	0.904	0.962	0.955					
<i>Bna2_MIR172e</i>	0.911	0.911	0.905	0.970	0.964	0.952				
<i>Bca1_MIR172e</i>	0.898	0.898	0.892	0.960	0.954	0.953	0.962			
<i>Bca2_MIR172e</i>	0.897	0.896	0.891	0.959	0.952	0.955	0.960	0.998		
<i>Bol1_MIR172e</i>	0.889	0.889	0.883	0.945	0.939	0.928	0.974	0.938	0.936	
<i>Bol2_MIR172e</i>	0.904	0.910	0.904	0.962	0.955	1.000	0.952	0.953	0.955	0.928

Table 3 Suppl. Size variation in *Brassica* miR172 precursors.

Pre-miRNA	Plant species	GenBank ID	Precursor length [bp]
Pre-miR172a	<i>Arabidopsis thaliana</i>	MI0000215	102
	<i>Brassica rapa</i>	KC118966	103
	<i>Brassica rapa</i>	KC118967	103
	<i>Brassica juncea</i>	KC118968	102
	<i>Brassica nigra</i>	KC118969	102
	<i>Brassica nigra</i>	KC118970	107
	<i>Brassica napus</i>	KC118971	103
	<i>Brassica carinata</i>	KC118972	102
	<i>Brassica carinata</i>	KC118973	103
	<i>Brassica carinata</i>	KC118974	107
	<i>Brassica oleracea</i>	KC118975	103
Pre-miR172b	<i>Arabidopsis thaliana</i>	MI0000216	95
	<i>Brassica rapa</i>	MI0010662	107
	<i>Brassica rapa</i>	JX041851	105
	<i>Brassica rapa</i>	JX041852	105
	<i>Brassica juncea</i>	JX041853	111
	<i>Brassica juncea</i>	JX041854	105
	<i>Brassica nigra</i>	JX041855	109
	<i>Brassica nigra</i>	JX041856	109
	<i>Brassica nigra</i>	JX041857	111
	<i>Brassica nigra</i>	JX041858	114
	<i>Brassica napus</i>	JX041859	105
	<i>Brassica carinata</i>	JX041860	105
	<i>Brassica carinata</i>	JX041861	110
	<i>Brassica oleracea</i>	MI0010666	107
	<i>Brassica oleracea</i>	JX041862	111
	<i>Brassica oleracea</i>	JX041863	104
	<i>Brassica oleracea</i>	JX041864	107
Pre-miR172d	<i>Arabidopsis thaliana</i>	MI0000992	124
	<i>Brassica rapa</i>	JX041865	124
	<i>Brassica juncea</i>	JX041866	124
	<i>Brassica nigra</i>	JX041867	124
	<i>Brassica napus</i>	JX041868	124
	<i>Brassica napus</i>	JX041869	124
	<i>Brassica carinata</i>	JX041870	124
	<i>Brassica carinata</i>	JX041871	124
	<i>Brassica oleracea</i>	JX041872	124
	<i>Brassica oleracea</i>	JX041873	124
Pre-miR172e	<i>Arabidopsis thaliana</i>	MI0001089	125
	<i>Brassica rapa</i>	JX041874	97
	<i>Brassica rapa</i>	JX041875	97

<i>Brassica rapa</i>	JX041876	97
<i>Brassica juncea</i>	JX041877	97
<i>Brassica juncea</i>	JX041878	97
<i>Brassica napus</i>	JX041879	97
<i>Brassica napus</i>	JX041880	97
<i>Brassica carinata</i>	JX041881	97
<i>Brassica carinata</i>	JX041882	97
<i>Brassica oleracea</i>	JX041883	97
<i>Brassica oleracea</i>	JX041884	97

Table 4 Suppl. Pairwise sequence similarity between precursors of miR172 isolated from *Brassica* species.

Pre-miR172a										
	Ath-miR172a	Bra1_miR172a	Bra2_miR172a	Bju1_miR172a	Bni1_miR172a	Bni2_miR172a	Bna1_miR172a	Bca1_miR172a	Bca2_miR172a	Bca3_miR172a
Bra1_miR172a	0.923									
Bra2_miR172a	0.922	0.894								
Bju1_miR172a	0.903	0.912	0.894							
Bni1_miR172a	0.903	0.912	0.894	1						
Bni2_miR172a	0.887	0.869	0.953	0.859	0.859					
Bna1_miR172a	0.922	0.894	1	0.894	0.894	0.953				
Bca1_miR172a	0.894	0.912	0.884	0.99	0.99	0.85	0.884			
Bca2_miR172a	0.923	1	0.894	0.912	0.912	0.869	0.894	0.912		
Bca3_miR172a	0.887	0.869	0.953	0.859	0.859	1	0.953	0.85	0.869	
Bol1_miR172a	0.922	0.894	1	0.894	0.894	0.953	1	0.884	0.894	0.953

Pre-miR172b														
	Ath-miR172b	Bra1_miR172b	Bra2_miR172b	Bju1_miR172b	Bju2_miR172b	Bni1_miR172b	Bni2_miR172b	Bni3_miR172b	Bni4_miR172b	Bna1_miR172b	Bca1_miR172b	Bca2_miR172b	Bol1_miR172b	Bol2_miR172b
Bra1_mir172b	0.866													
Bra2_mir172b	0.866	1												
Bju1_mir172b	0.774	0.846	0.846											
Bju2_mir172b	0.866	1	1	0.846										
Bni1_mir172b	0.779	0.871	0.871	0.963	0.871									
Bni2_mir172b	0.779	0.871	0.871	0.963	0.871	1								
Bni3_mir172b	0.774	0.846	0.846	0.99	0.846	0.963	0.963							
Bni4_mir172b	0.798	0.877	0.877	0.885	0.877	0.868	0.868	0.894						
Bna1_mir172b	0.866	1	1	0.846	1	0.871	0.871	0.846	0.877					
Bca1_mir172b	0.857	0.98	0.98	0.828	0.98	0.853	0.853	0.828	0.859	0.98				
Bca2_mir172b	0.781	0.854	0.854	0.981	0.854	0.981	0.981	0.981	0.885	0.854	0.836			
Bol1_mir172b	0.812	0.892	0.892	0.877	0.892	0.883	0.883	0.877	0.973	0.892	0.875	0.884		
Bol2_mir172b	0.857	0.99	0.99	0.837	0.99	0.862	0.862	0.837	0.868	0.99	0.971	0.845	0.883	
Bol3_mir172b	0.842	0.907	0.907	0.891	0.907	0.899	0.899	0.891	0.912	0.907	0.888	0.9	0.936	0.898

Pre-miR172d										
	Ath-miR172d	Bra1_miR172d	Bju1_miR172d	Bni1_miR172d	Bna1_miR172d	Bna2_miR172d	Bca1_miR172d	Bca2_miR172d	Bol1_miR172d	
Bra1_mir172d	0.895									
Bju1_miR172d	0.911	0.983								
Bni1_miR172d	0.911	0.983	1							
Bna1_miR172d	0.895	1	0.983	0.983						
Bna2_miR172d	0.895	0.983	0.983	0.983	0.983					
Bca1_miR172d	0.911	0.983	1	1	0.983	0.983				
Bca2_miR172d	0.895	0.983	0.983	0.983	0.983	1	0.983			
Bol1_miR172d	0.903	0.983	0.983	0.983	0.983	0.983	0.983	0.983		

Bol2_miR172d	0.895	0.983	0.983	0.983	0.983	1	0.983	1	0.983		
Pre-miR172e											
	Ath- miR172e	Bra1_ miR172e	Bra2_ miR172e	Bra3_ miR172e	Bju1_ miR172e	Bju2_ miR172e	Bna1_ miR172e	Bna2_ miR172e	Bca1_ miR172e	Bca2_ miR172e	Bol1_ miR172e
Bra1_miR172e	0.698										
Bra2_miR172e	0.698	1									
Bra3_miR172e	0.698	1	1								
Bju1_miR172e	0.698	1	1	1							
Bju2_miR172e	0.69	0.989	0.989	0.989	0.989						
Bna1_miR172e	0.682	0.979	0.979	0.979	0.979	0.969					
Bna2_miR172e	0.698	1	1	1	1	0.989	0.979				
Bca1_miR172e	0.69	0.989	0.989	0.989	0.989	0.979	0.969	0.989			
Bca2_miR172e	0.682	0.979	0.979	0.979	0.979	0.969	0.979	0.979	0.989		
Bol1_miR172e	0.698	1	1	1	1	0.989	0.979	1	0.989	0.979	
Bol2_miR172e	0.682	0.979	0.979	0.979	0.979	0.969	1	0.979	0.969	0.979	0.979

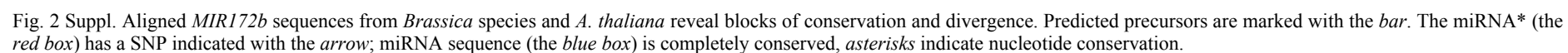


Fig. 2 Suppl. Aligned *MIR172b* sequences from *Brassica* species and *A. thaliana* reveal blocks of conservation and divergence. Predicted precursors are marked with the *bar*. The miRNA* (the *red box*) has a SNP indicated with the *arrow*; miRNA sequence (the *blue box*) is completely conserved, *asterisks* indicate nucleotide conservation.

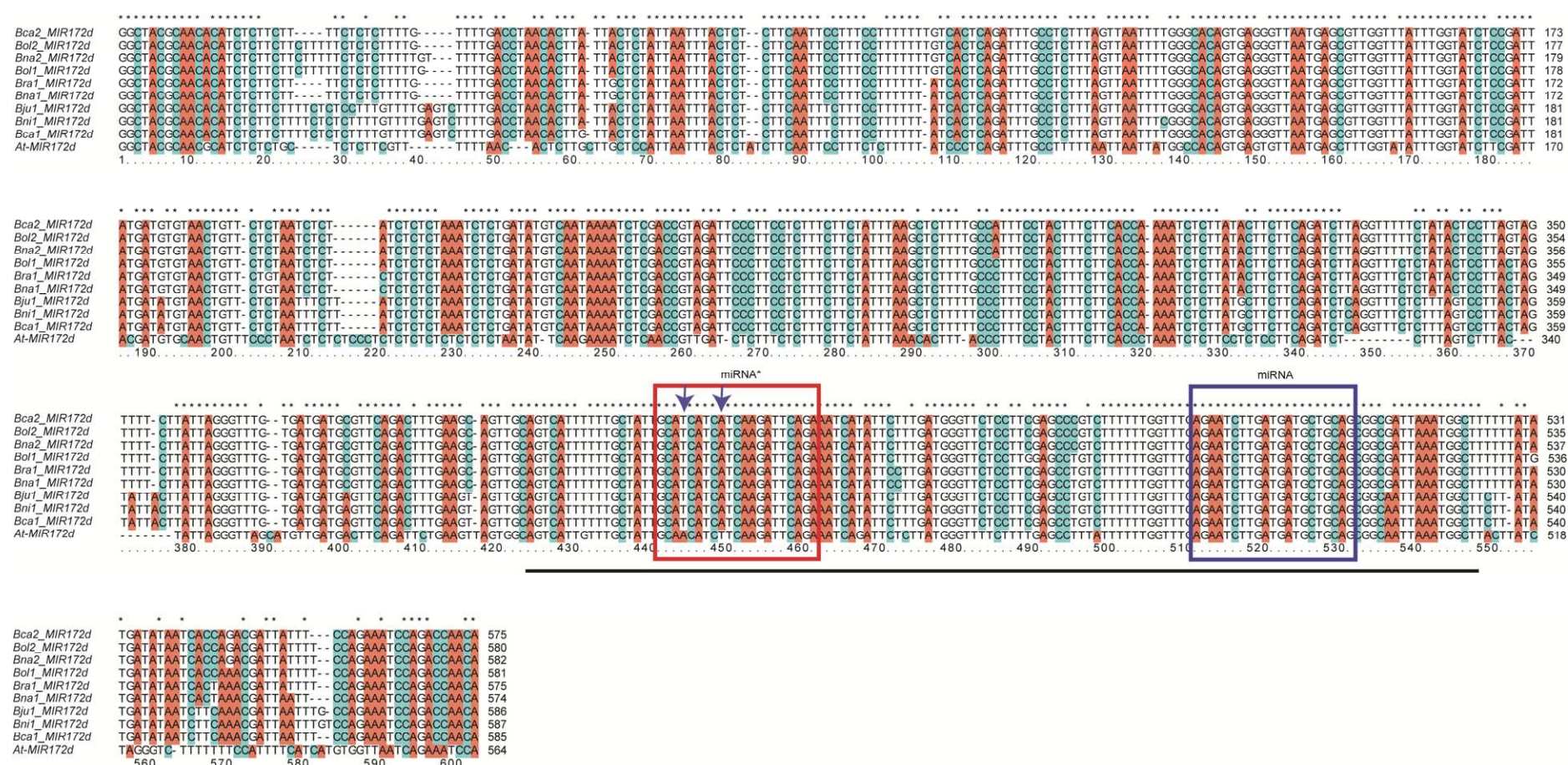


Fig. 3 Suppl. Aligned *MIR172d* sequences from *Brassica* species and *A. thaliana* reveal blocks of conservation and divergence. Predicted precursors are marked with the bar. The miRNA* (the red box) has SNPs indicated with the arrows; miRNA sequence (the blue box) is completely conserved. The asterisks indicate nucleotide conservation.

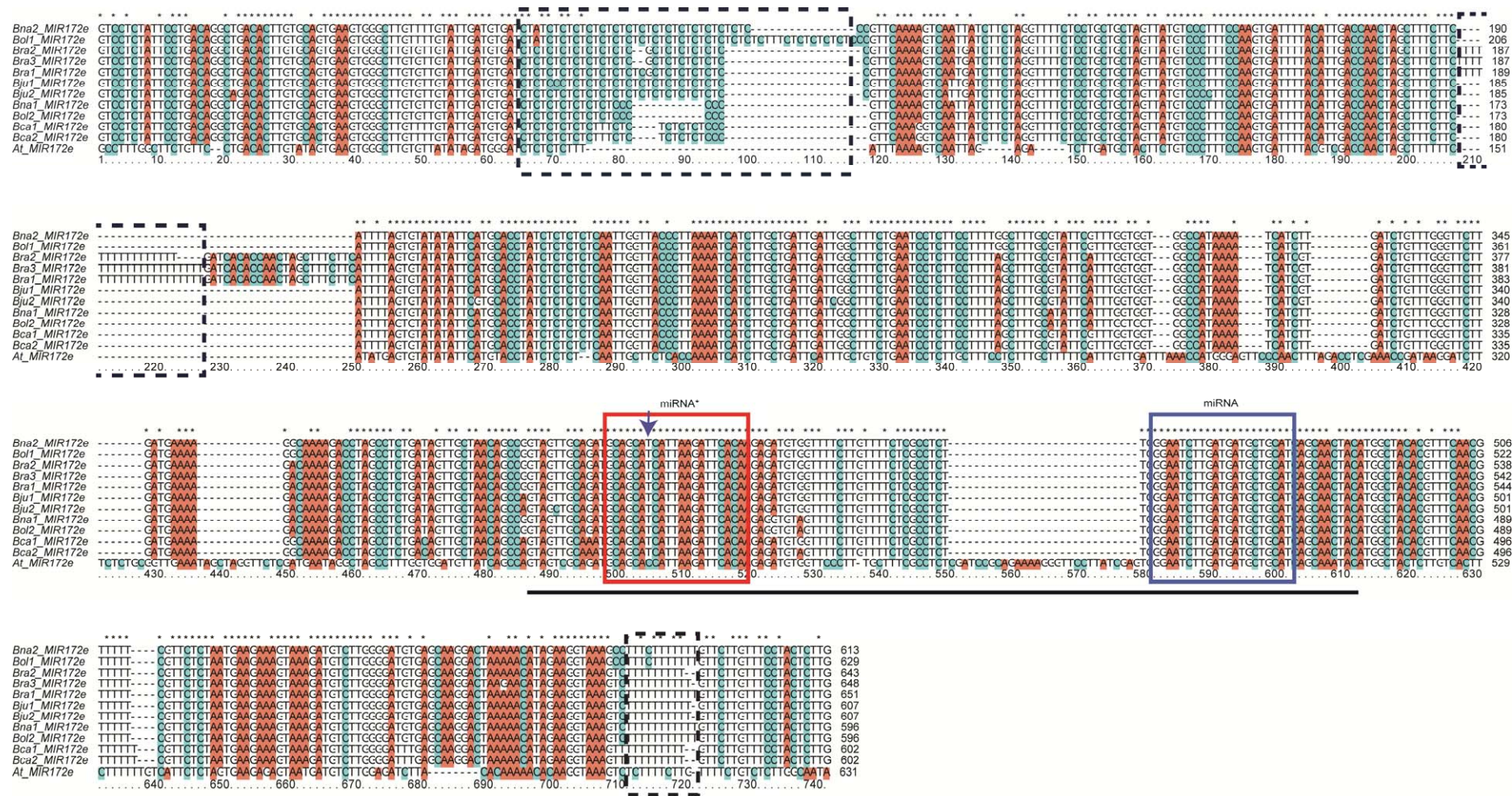


Fig. 4 Suppl. Aligned *MIR172e* sequences from *Brassica* species and *A. thaliana* reveal blocks of sequence conservation and divergence. The *dashed boxes* represent dinucleotide (CT) variable repeats and a homo-polymeric stretch of T residues. Predicted precursors of *Brassica* species have a 29 bp deletion compared to *A. thaliana*. The miRNA* (the *red box*) has a SNP indicated with the *arrow*; miRNA sequence (the *blue box*) is completely conserved. The *asterisks* indicate nucleotide conservation.

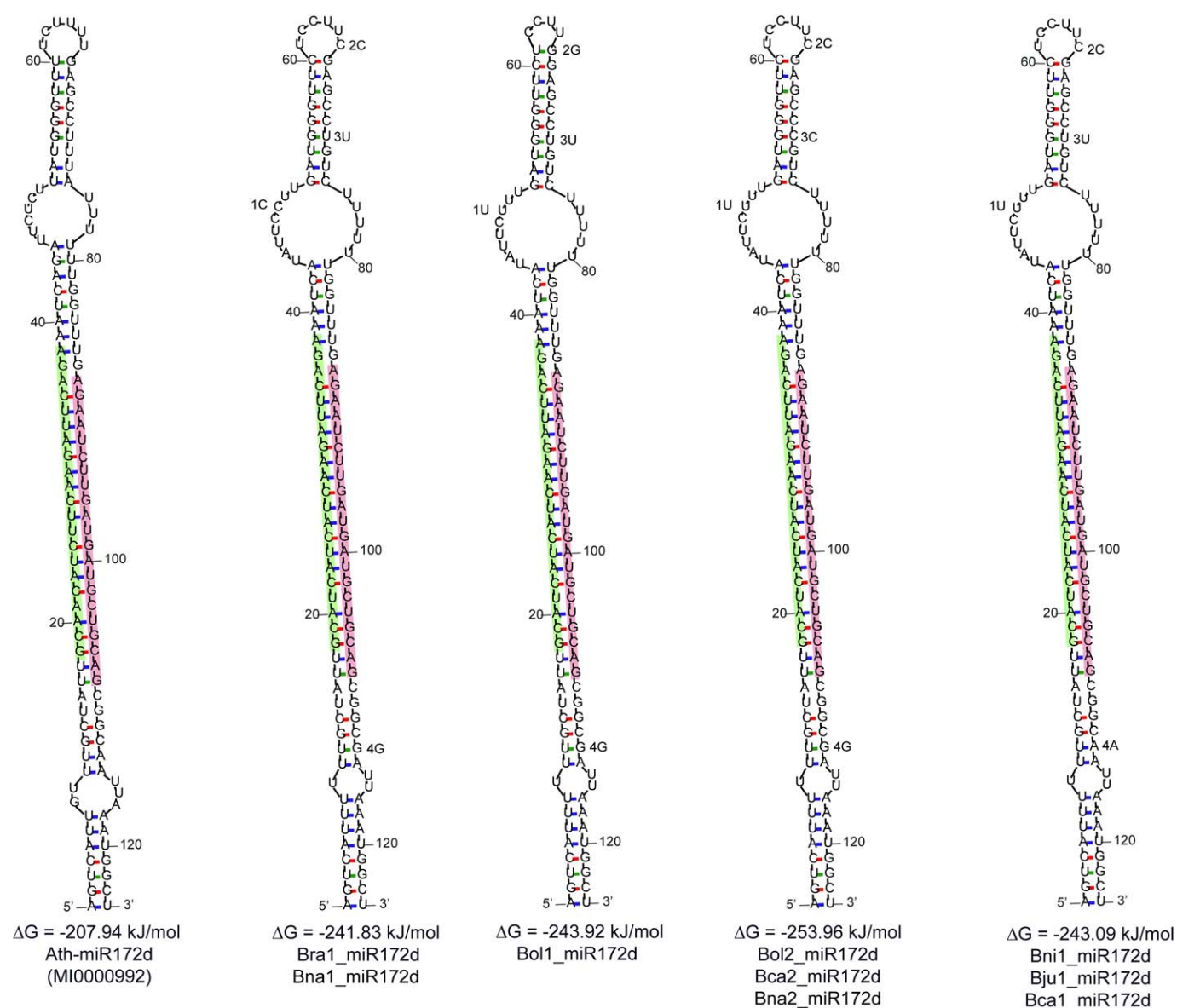


Fig. 5 Suppl. Predicted fold-back structures of *Brassica* miR172d precursors; corresponding ΔG values are depicted. SNPs within fold-back structures of miR172d are marked numerically in the order of their appearance in direction from 5' to 3'. The miRNA and miRNA* are highlighted in *pink* and *green*, respectively.

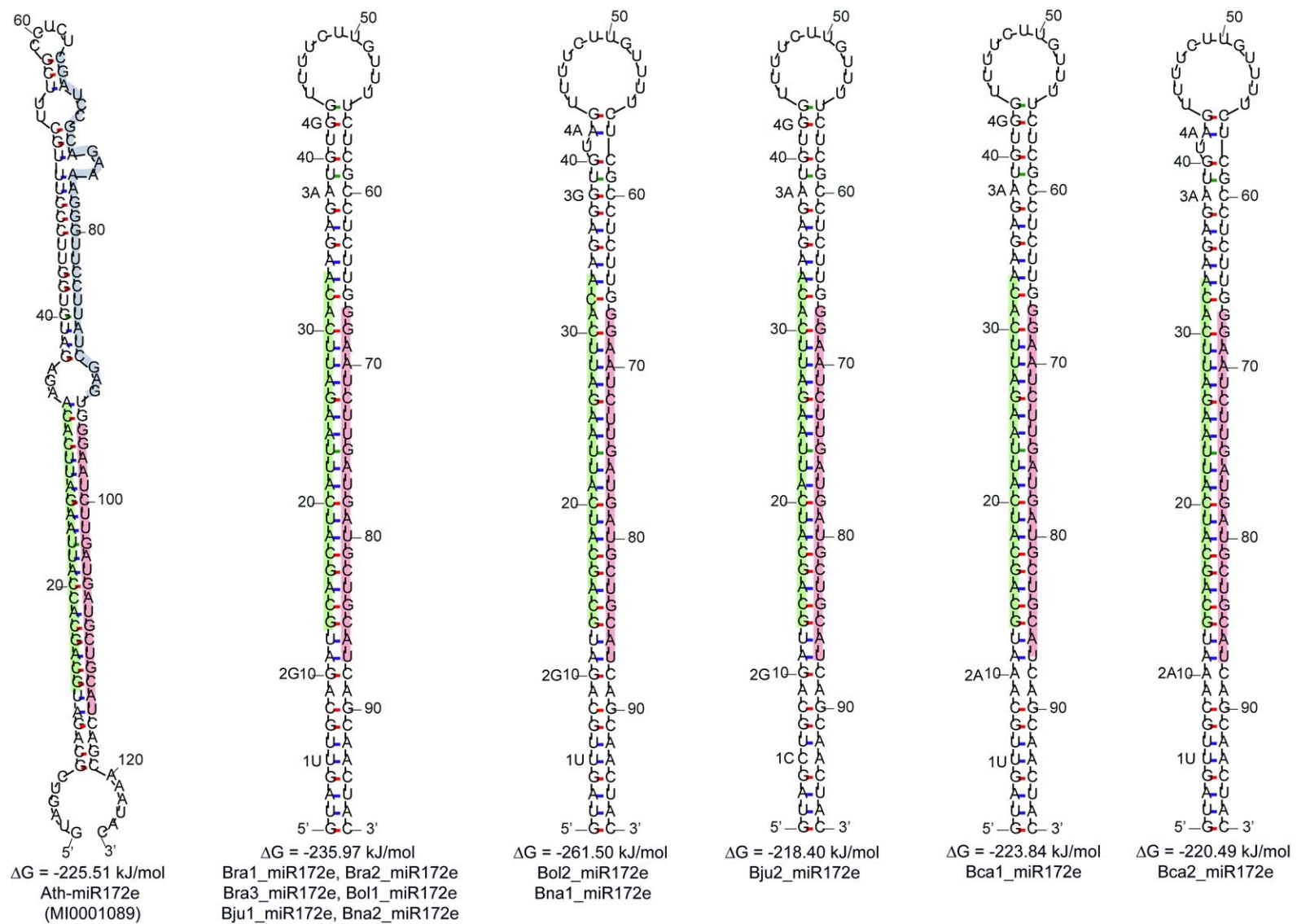


Fig. 6 Suppl. Predicted fold-back structures of *Brassica* miR172e precursors; corresponding ΔG values are depicted. SNPs within fold-back structures of miR172d are marked numerically in the order of their appearance in direction from 5' to 3'. Predicted precursors form nearly identical secondary structures even though they differ by four SNPs (1U/C, 2G/A, 3A/G, and 4G/A). The miRNA and miRNA* are highlighted in *pink* and *green*, respectively.

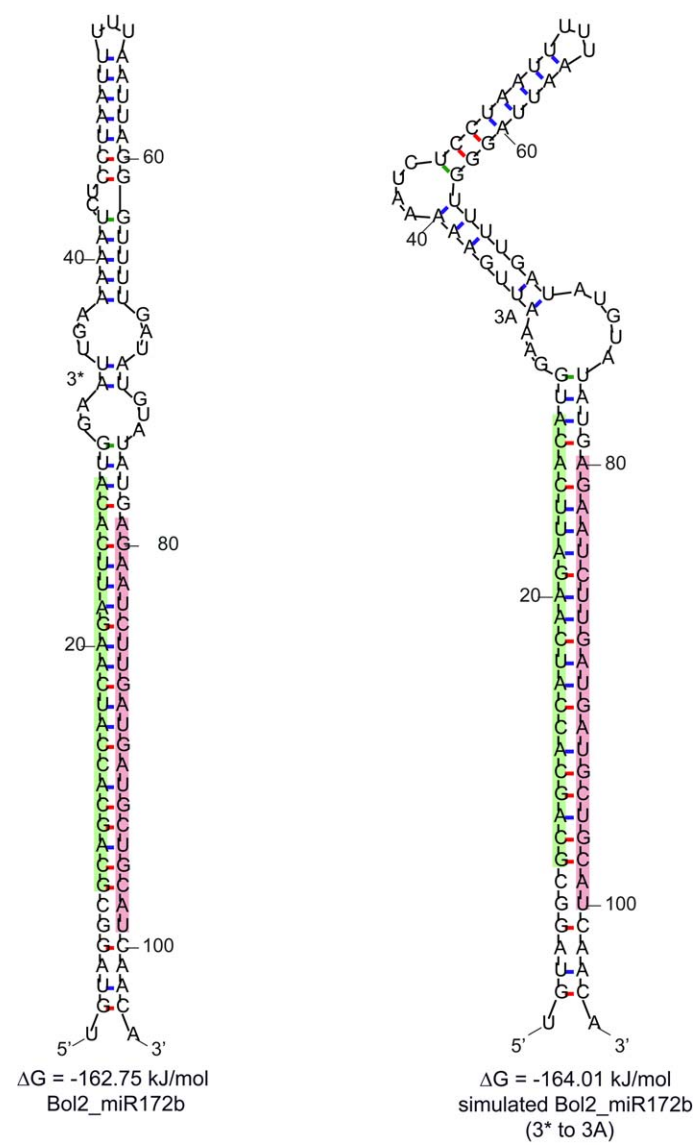


Fig. 7 Suppl. The naturally occurring fold-back structure of the Bol2_miR172b precursor mimics that of Bra1_miR172b on introducing a single adenine residue (3*→3A). The miRNA and miRNA* are highlighted in *pink* and *green*, respectively.

