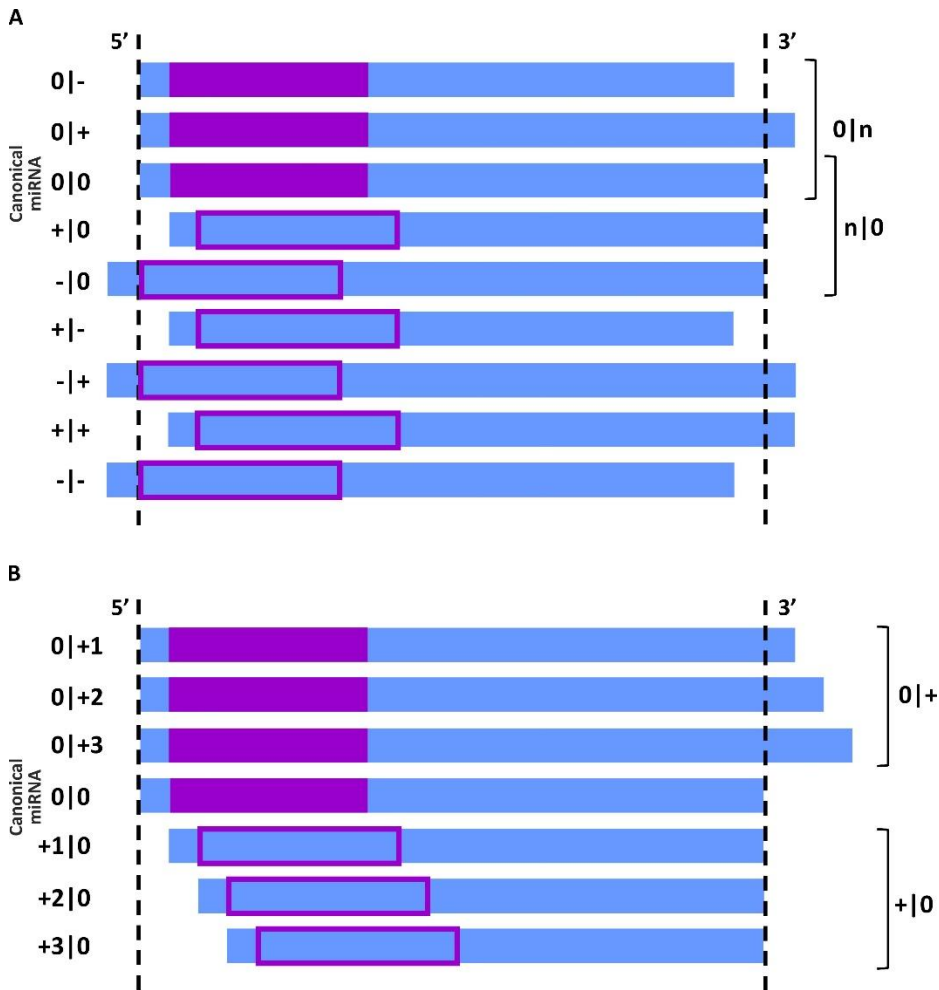
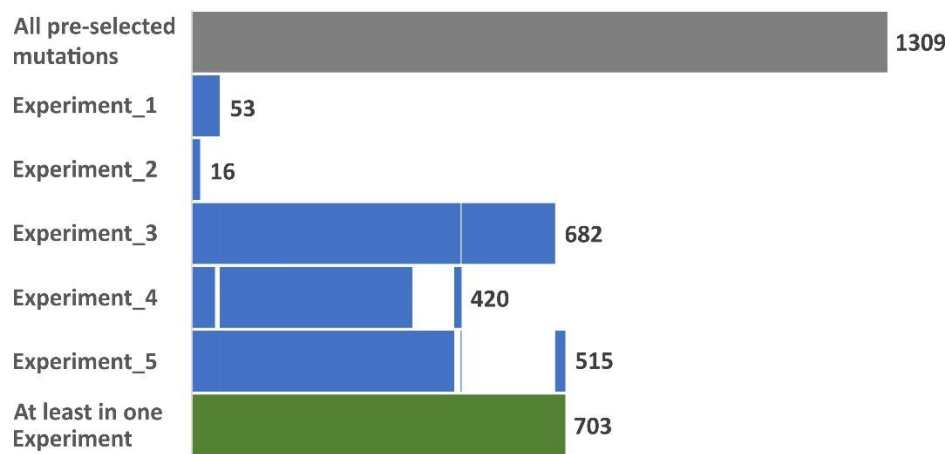


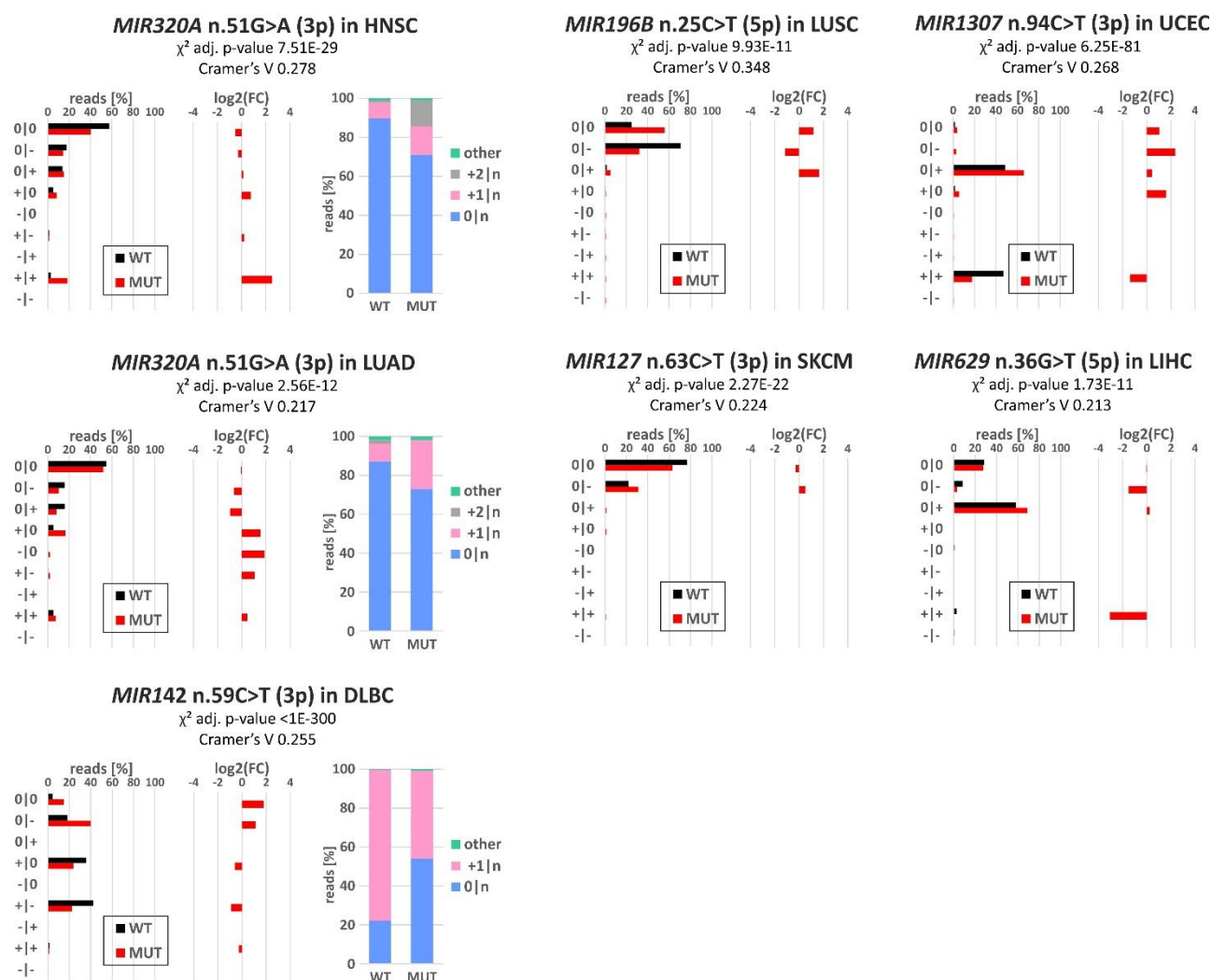
## Supplementary Figures



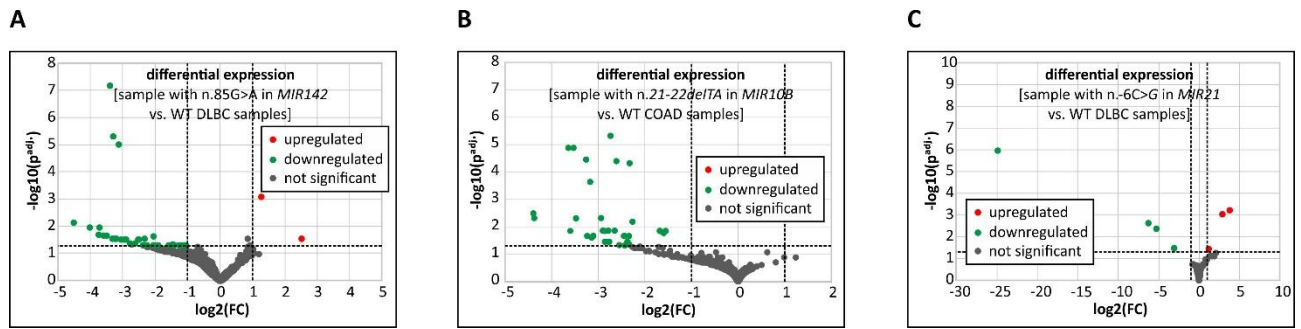
**Supplementary Figure S1** Principles of the classification and denotation of isomiRs. The canonical (0|0) and different classes of isomiRs are shown as light blue rectangles; the canonical seed sequence is marked as a purple rectangle, and altered shifted seeds are marked as open rectangles. A – Principles of isomiRs denotation on the basis of the direction of the end shift; ‘n’ denotes any shift at a given end of the mature miRNA. B – Principles of denotation of the size (nucleotide number) of the end shift.



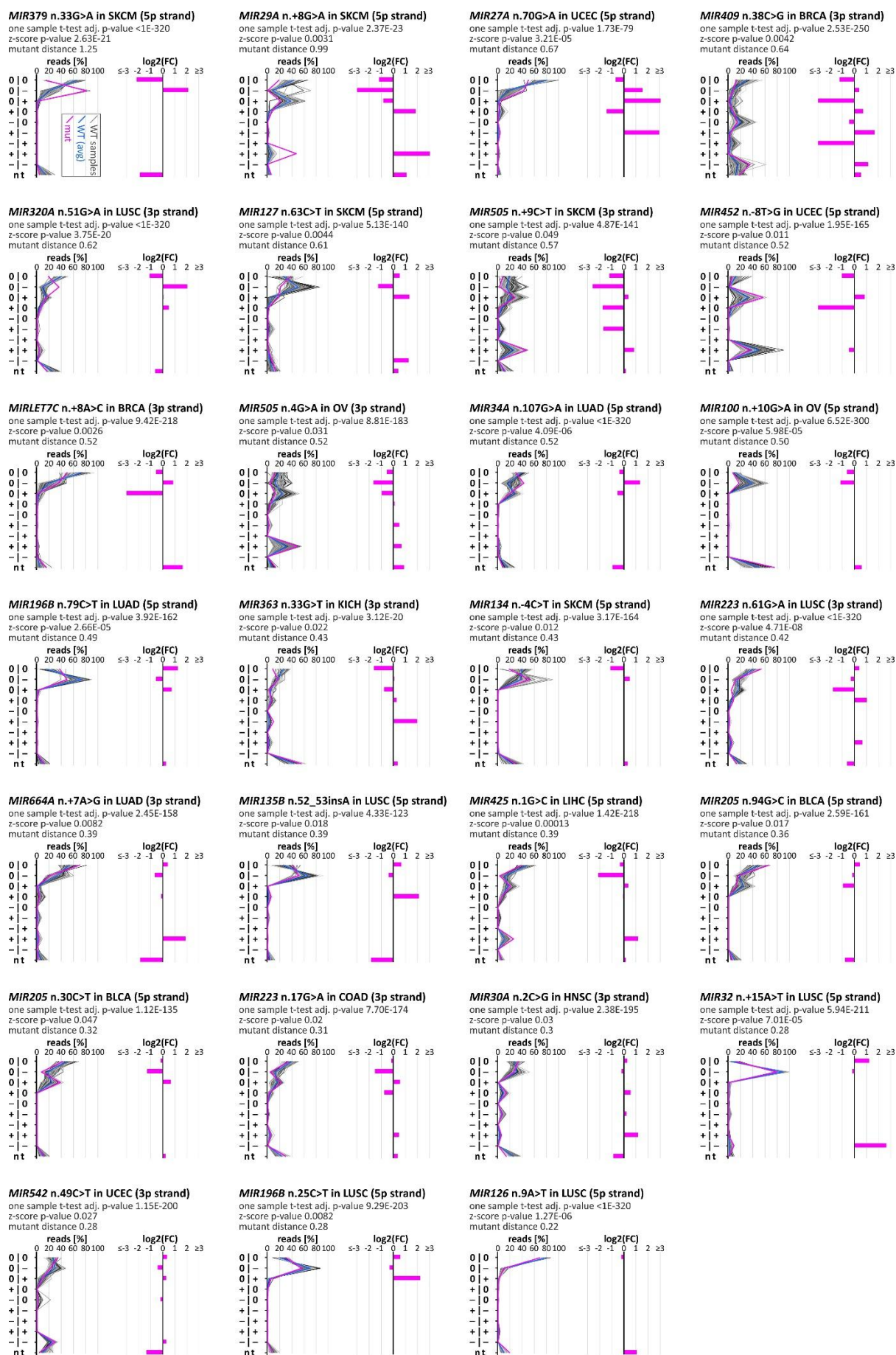
**Supplementary Figure S2** The number and overlap of mutations preselected for the study (see Figure 1; gray bar) and selected for subsequent Experiments (blue bars). The green bar indicates mutations used in at least one Experiment. The blue and green bars are juxtaposed with the order of mutations in the gray bar, which are sorted according to their selection for the subsequent Experiments.



**Supplementary Figure S3** Effects of miRNA gene mutations on isomiR distribution (Experiment\_2). The figure scheme as in Figure 3D and F.

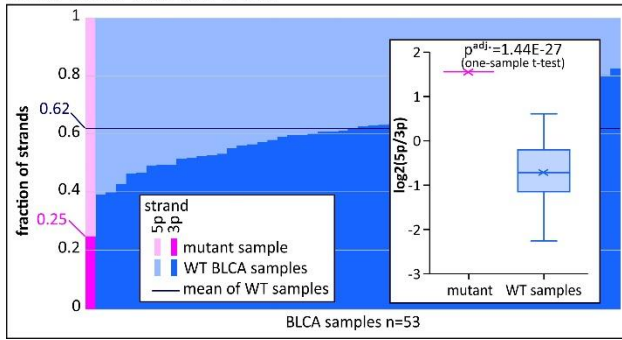


**Supplementary Figure S4** Volcano plots illustrating differential expression analysis of samples with mutations affecting isomiR profiles (Experiment\_4; as shown in Figure 5): A – n.85G>A in *MIR142*, B – n.21-22delTA in *MIR10B*, C – n.-6C>G in *MIR21*, vs. corresponding wild-type samples. Red, green, and gray dots indicate upregulated, downregulated, and not significantly changed genes, respectively.

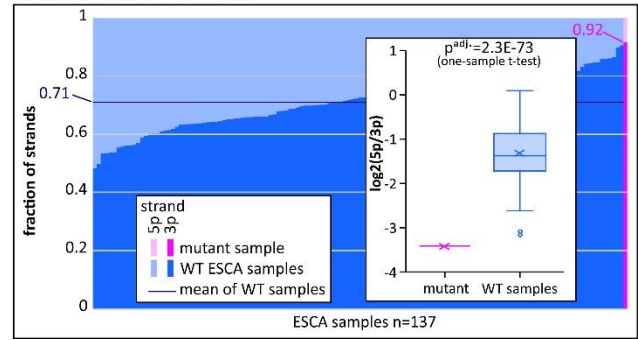


**Supplementary Figure S5** Effects of miRNA gene mutations on isomiR profiles (Experiment\_4). The graph scheme as in Figure 5C, D and E

**MIR520A n.43G>C in BLCA**



**MIR409 n.3G>T in ESCA**



**Supplementary Figure S6** Effects of miRNA gene mutations on the balance of miRNA strands (Experiment\_5). Influence of n.43G>C in the loop of *MIR520A* and n.3G>T in the 5p-flank of *MIR409* on the change in the balance of miRNA strands. The graph scheme as in Figure 6C and D.