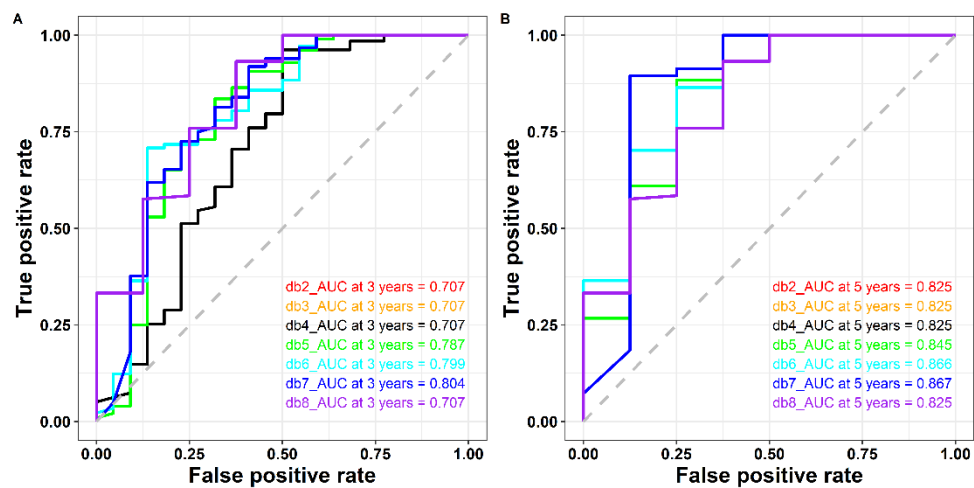


## Additional file 1

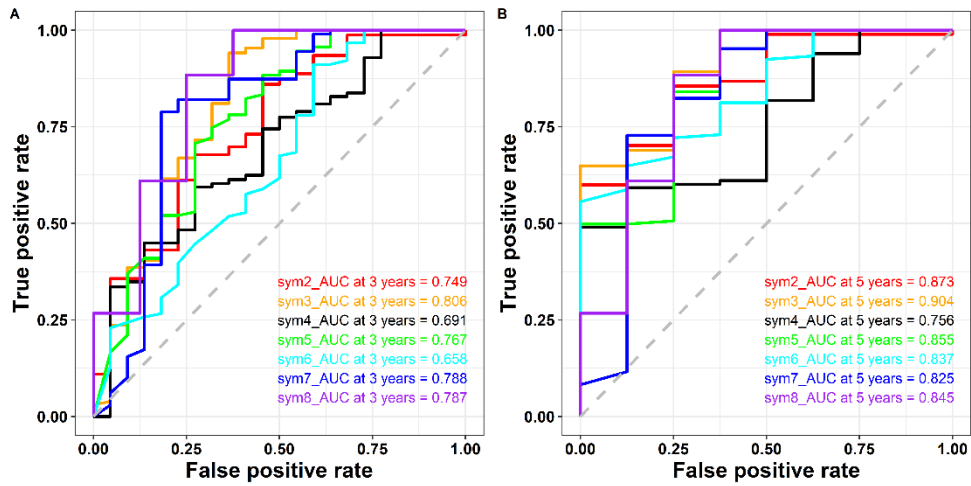
**Table 1.** The analysis results of PAAD dataset about comparisons on the adopted wavelet-based, SWT-CNN methods and classic LASSO methods with diverse predictors

	Wavelet function	AUC at 3 years	AUC at 5 years	gene number
<b>db</b>	db2	0.707	0.825	7
	db3	0.707	0.825	7
	db4	0.707	0.825	7
	db5	0.787	0.845	6
	db6	0.799	0.866	6
	db7	0.804	0.867	5
	db8	0.707	0.825	5
<b>bior</b>	bior1.1	0.797	0.858	5
	bior1.3	0.769	0.838	6
	bior1.5	0.787	0.937	5
	bior2.2	0.681	0.809	4
	bior2.4	0.736	0.857	8
	bior2.6	0.707	0.790	6
	bior2.8	0.729	0.724	8
	bior3.1	0.761	0.908	7
	bior3.3	0.760	0.908	7
	bior3.5	0.760	0.890	6
	bior3.7	0.691	0.800	5
	bior3.9	0.732	0.857	6
	bior4.4	0.751	0.839	4
	bior5.5	0.795	0.881	8
	bior6.8	0.697	0.792	6
<b>sym</b>	sym2	0.749	0.873	8
	sym3	0.806	0.904	5
	sym4	0.691	0.756	7
	sym5	0.767	0.855	5
	sym6	0.658	0.837	5
	sym7	0.788	0.825	6
	sym8	0.787	0.845	7
<b>coif</b>	coif2	0.700	0.785	9
	coif3	0.775	0.745	6
	coif4	0.696	0.788	5
	coif5	0.700	0.785	9
<b>haar</b>		0.618	0.756	5
<b>dmeyer</b>		0.823	0.869	7
	rbio1.1	0.759	0.826	11

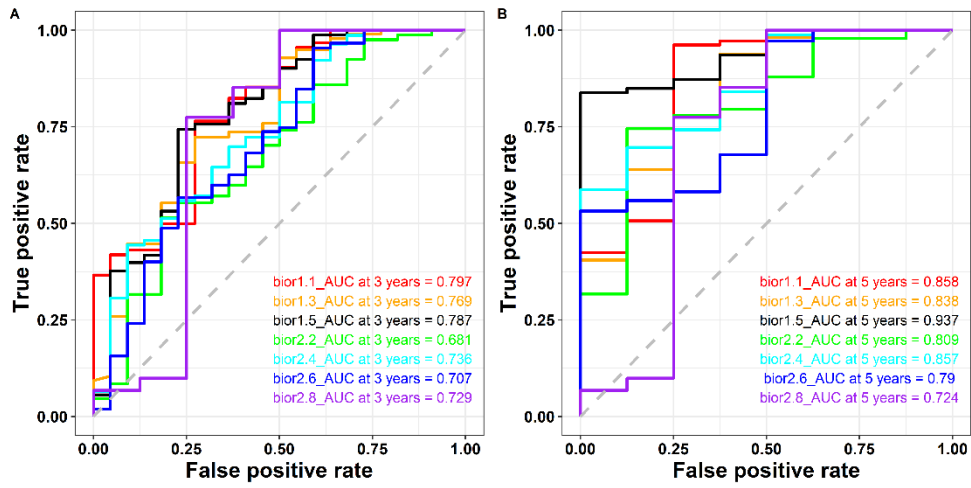
<b>rbio</b>	rbio1.3	0.726	0.734	5
	rbio1.5	0.766	0.827	8
	rbio2.2	0.823	0.884	7
	rbio2.4	0.799	0.894	9
	rbio2.6	0.790	0.894	9
	rbio2.8	0.852	0.897	10
	rbio3.1	0.812	0.834	9
	rbio3.3	0.595	0.719	6
	rbio3.5	0.749	0.774	7
	rbio3.7	0.783	0.858	8
	rbio3.9	0.693	0.725	6
	rbio4.4	0.795	0.824	7
	rbio5.5	0.762	0.760	10
	rbio6.8	0.784	0.817	7
<b>fk</b>	fk4	0.687	0.873	6
	fk6	0.681	0.859	7
	fk8	0.682	0.827	4
	fk14	0.672	0.861	5
	fk18	0.689	0.792	7
	fk22	0.733	0.856	8
<b>SWT-CNN</b>	sym4	0.721	0.859	8
<b>LASSO</b>		0.782	0.802	11



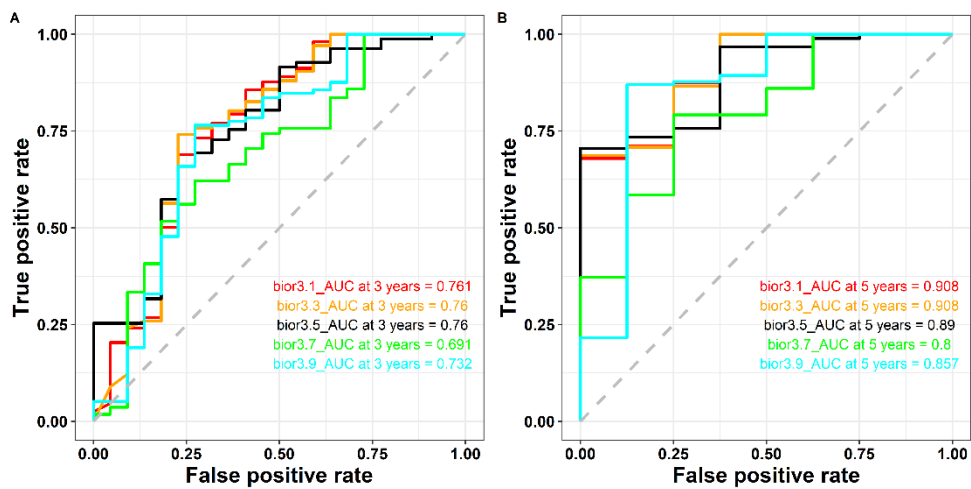
**Figure 1.** The performance of PAAD dataset on db basis function.



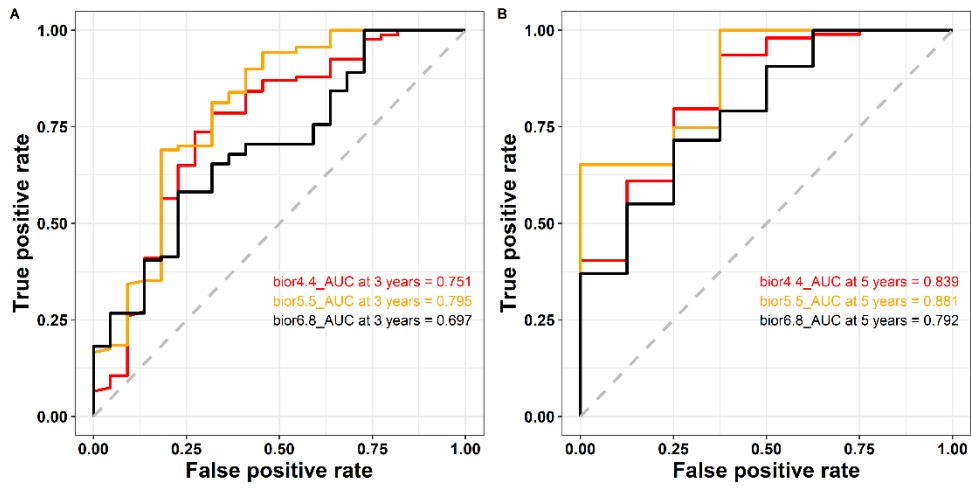
**Figure 2.** The performance of PAAD dataset on sym basis function.



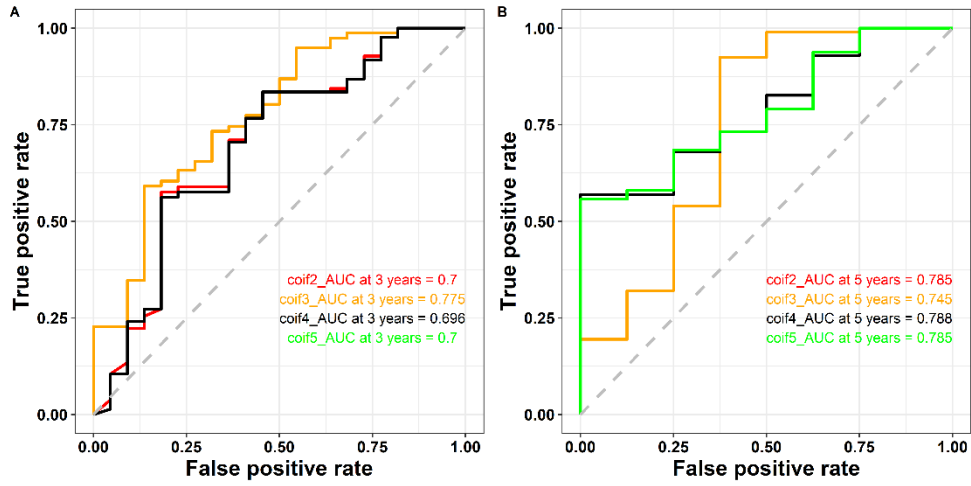
**Figure 3.** The performance of PAAD dataset on bior basis function (bior1.1~bior2.8).



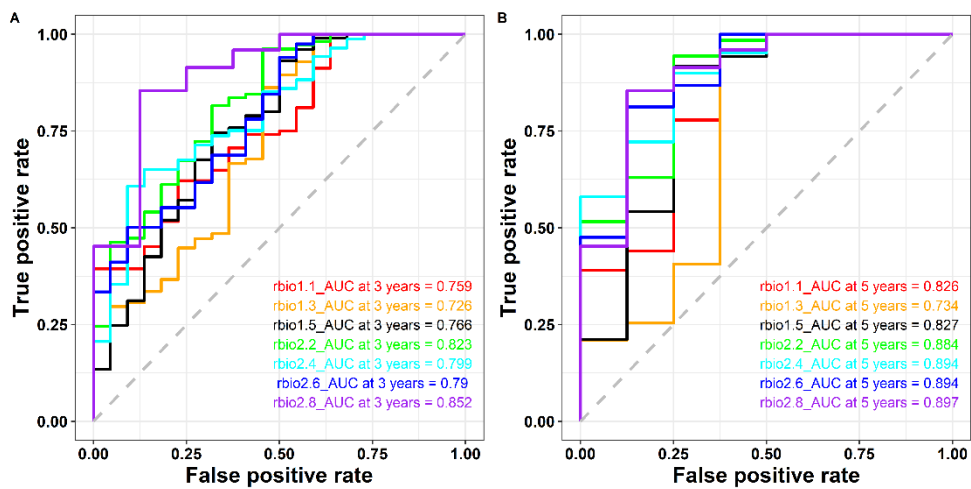
**Figure 4.** The performance of PAAD dataset on bior basis function (bior3.1~bior3.9).



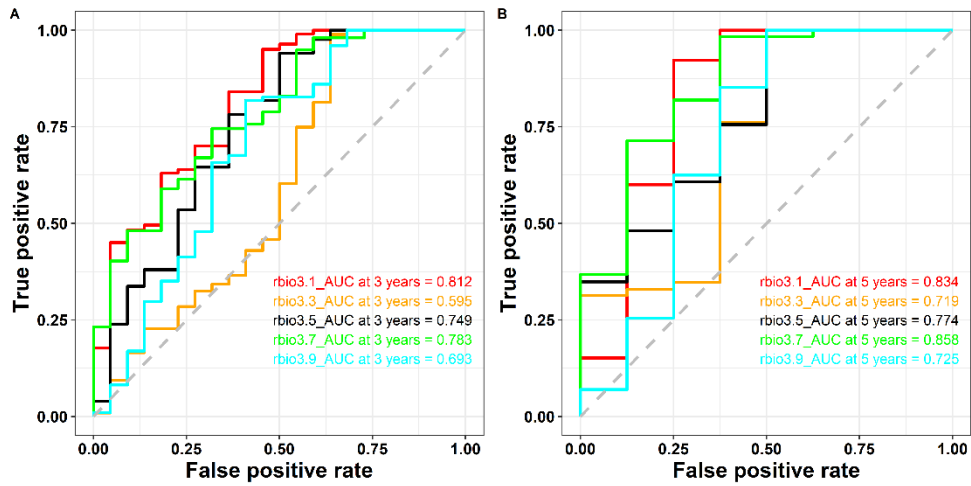
**Figure 5.** The performance of PAAD dataset on bior basis function (bior4.4~bior6.8).



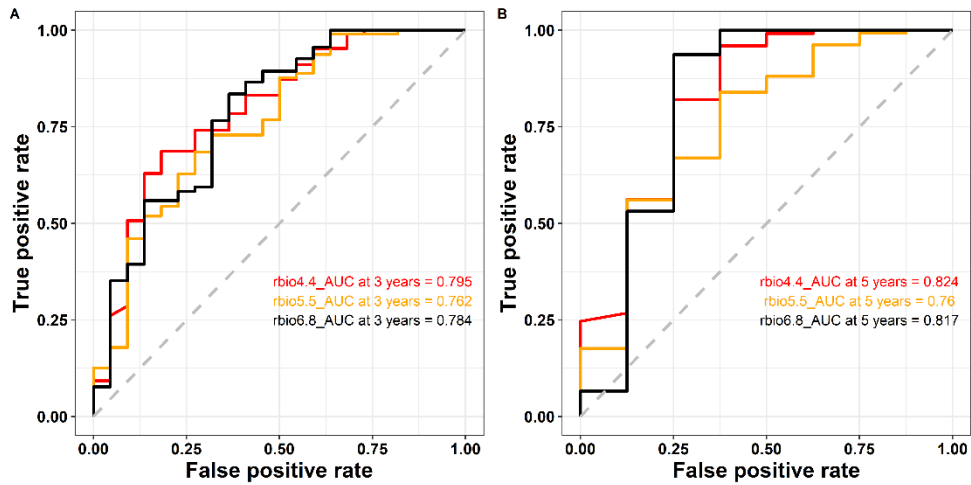
**Figure 6.** The performance of PAAD dataset on coif basis function.



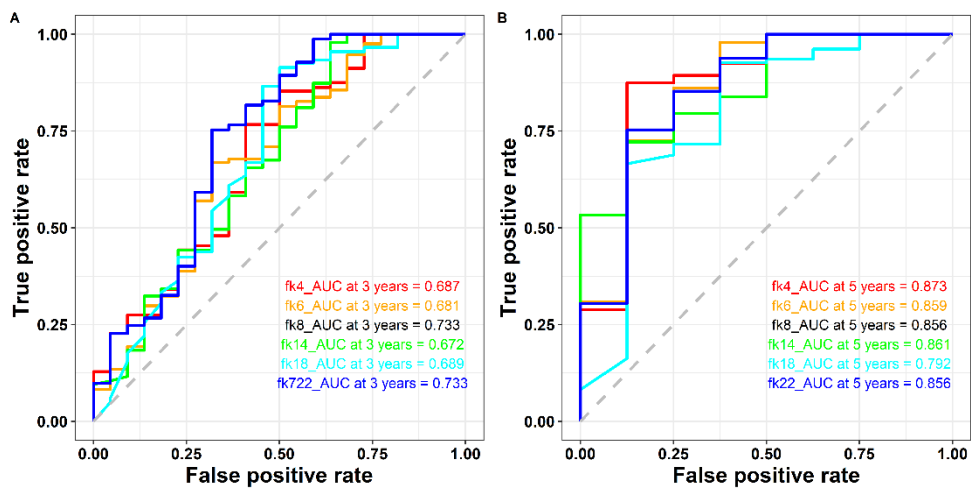
**Figure 7.** The performance of PAAD dataset on rbio basis function (rbio1.1~rbio2.8).



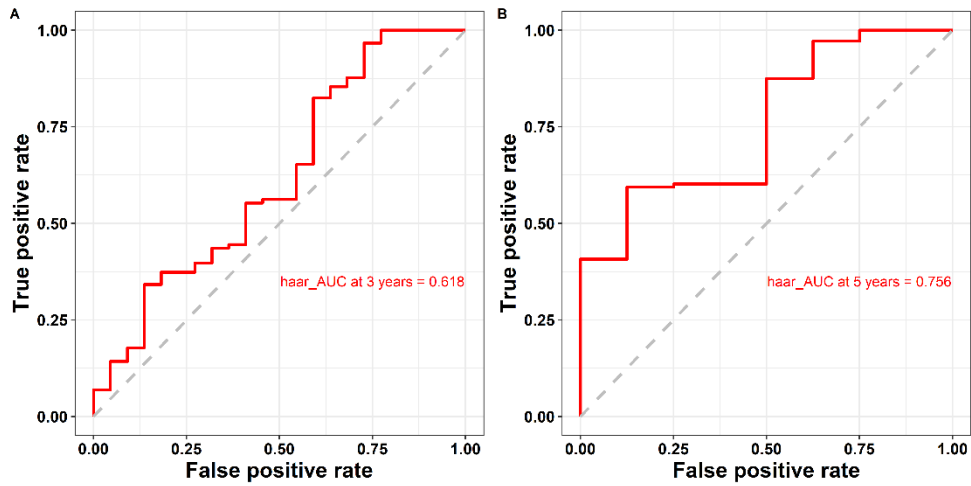
**Figure 8.** The performance of PAAD dataset on rbio basis function (rbio3.1~rbio3.9).



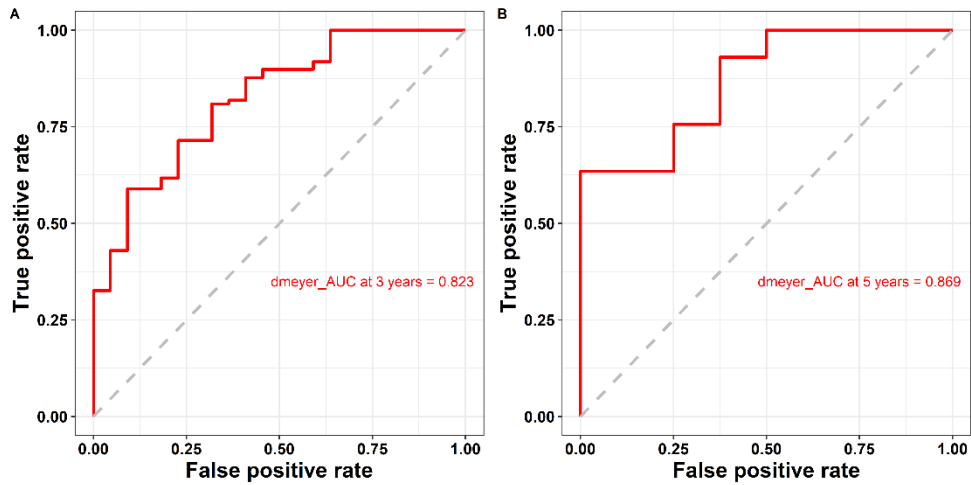
**Figure 9.** The performance of PAAD dataset on rbio basis function (rbio4.4~rbio6.8).



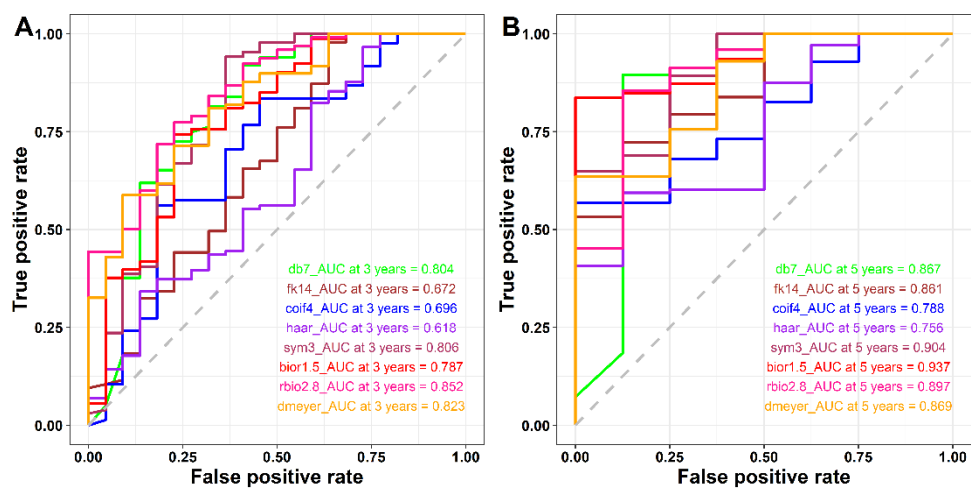
**Figure 10.** The performance of PAAD dataset on fk basis function.



**Figure 11.** The performance of PAAD dataset on haar basis function.



**Figure 12.** The performance of PAAD dataset on dmeyer basis function.



**Figure 13.** The performance of PAAD dataset on all basis functions (Take the smoothness corresponding to the best result for each basis function).