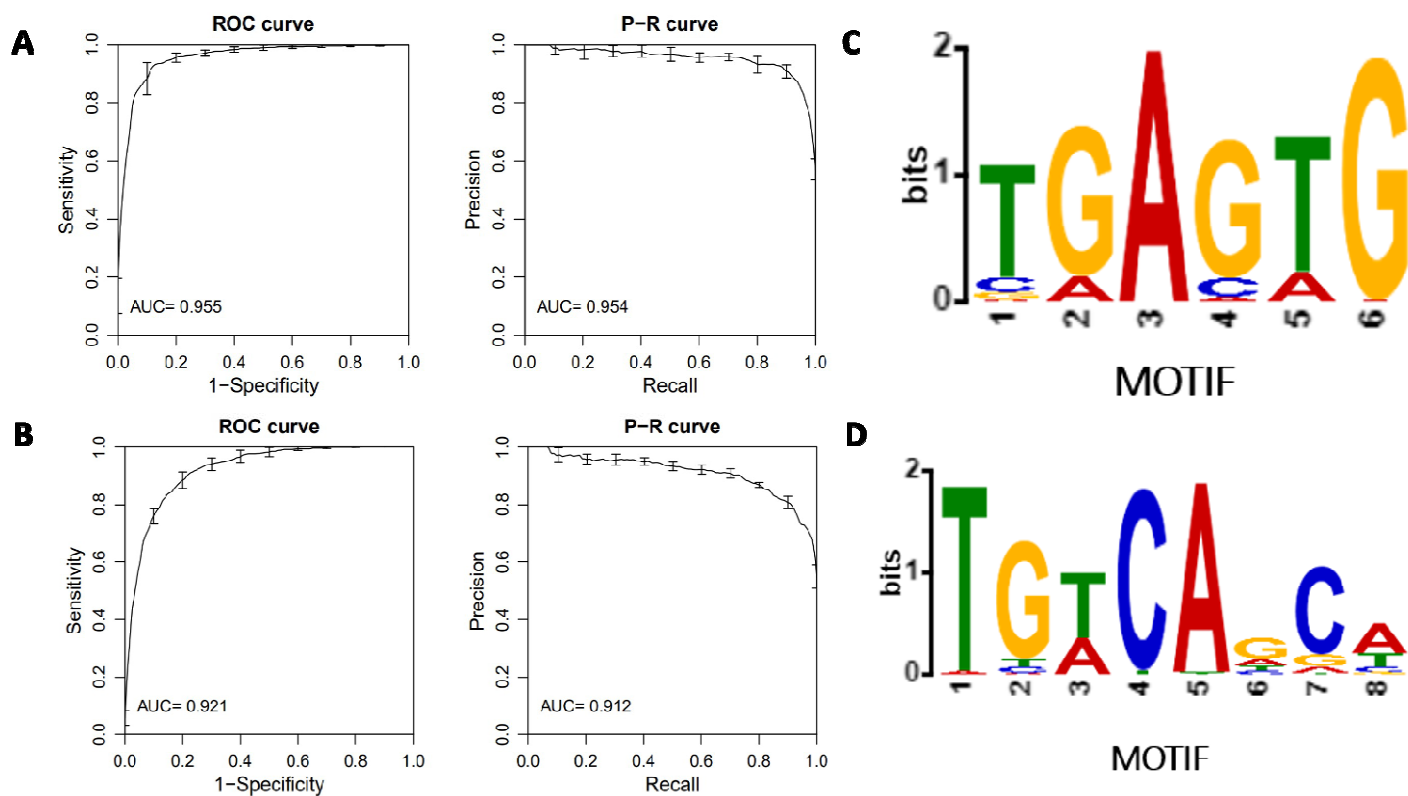


Name	Sequence
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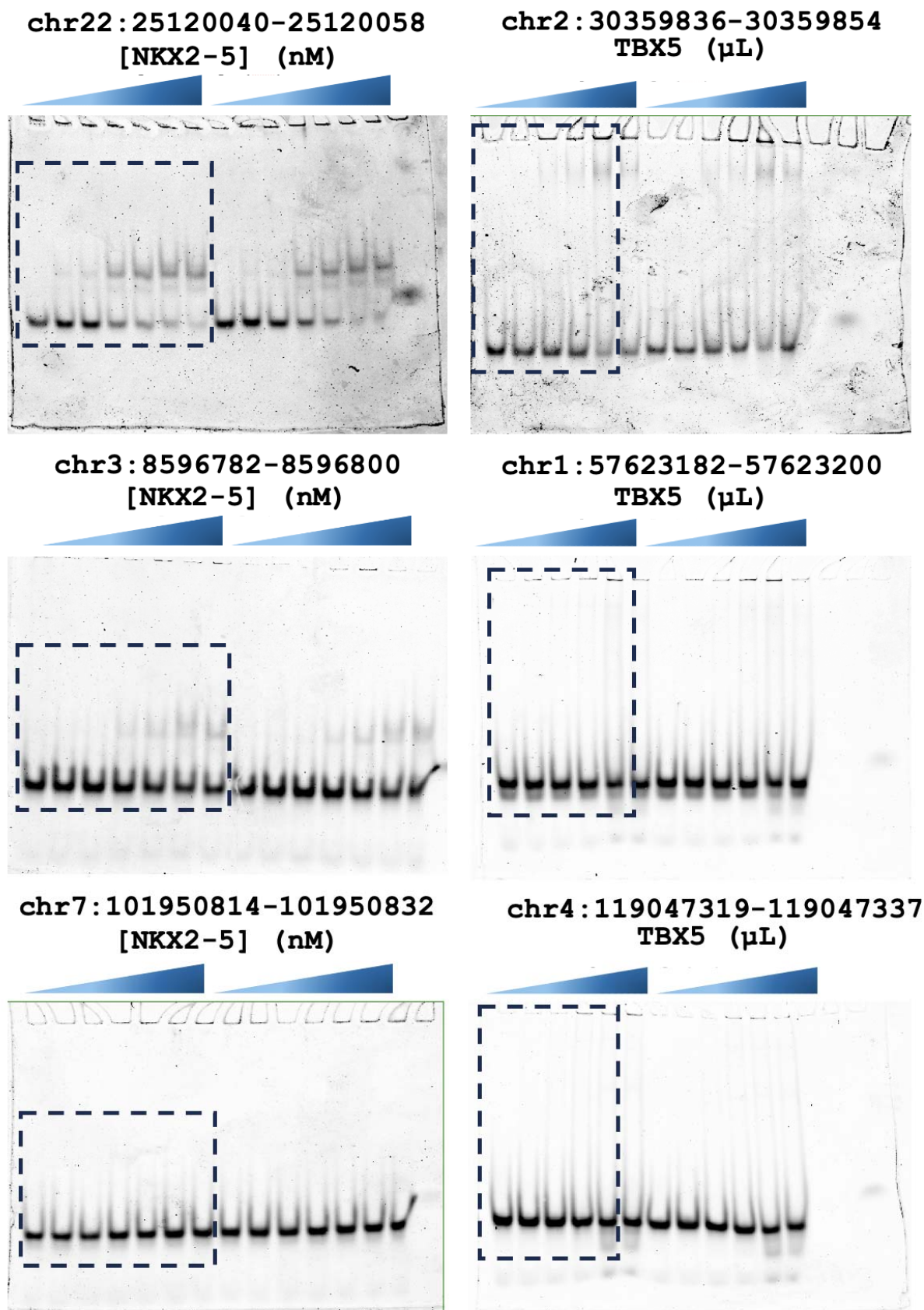
NKX2-5 enhancer chr22:25120040-25120058	5'- ACTTCTTGAGTGCCTGCTCGTGCCAATGCCGCCGTAAG -3'
NKX2-5 enhancer chr3:8596782-8596800	5'- CCATGCTATCATCACTCACGTGCCAATGCCGCCGTAAG -3'
NKX2-5 enhancer chr7:101950814-101950832	5'- AGTGCTGGGATTACAGGCCGTGCCAATGCCGCCGTAAG -3'
TBX5 enhancer chr2:30359836-30359854	5'- TGGTGCTGACAGCTGGGACGTGCCAATGCCGCCGTAAG -3'
TBX5 enhancer chr1:57623182-57623200	5'- GCCGGCAGAGCTGACAGGCGTGCCAATGCCGCCGTAAG -3'
TBX5 enhancer chr4:119047319-119047337	5'- AAGTGCTGGGATTACAGGCGTGCCAATGCCGCCGTAAG -3'
rs6715570-ref	5'- TAACACTCATGAAAATGTCTCGTGCCAATGCCGCCGTAAG -3'
rs6715570-alt	5'- TAACACTCAAGAAAATGTCTCGTGCCAATGCCGCCGTAAG -3'
rs61872084-ref	5'- AATTCAACACTTTTCATTAAACGTGCCAATGCCGCCGTAAG -3'
rs61872084-alt	5'- AATTCAACATTTTCATTAAACGTGCCAATGCCGCCGTAAG -3'
rs59310144-ref	5'- AGAAGTCAAGTAATCTGTCACGTGCCAATGCCGCCGTAAG -3'
rs59310144-alt	5'- AGAAGTCAAATAATCTGTCACGTGCCAATGCCGCCGTAAG -3'
IR 700 Primer	5'- /5IRD700/CTTACGGCGGCATTGGCACG -3'
TBX5 Cloning pEU Forward	5'- CTGTATTTTCAGGGCATGGCCGACGCAGAC -3'
TBX5 Cloning pEU Reverse	5'- CGTAAATTCTATACAACTACAAGCTATTGTCGC -3'

Supplementary Material

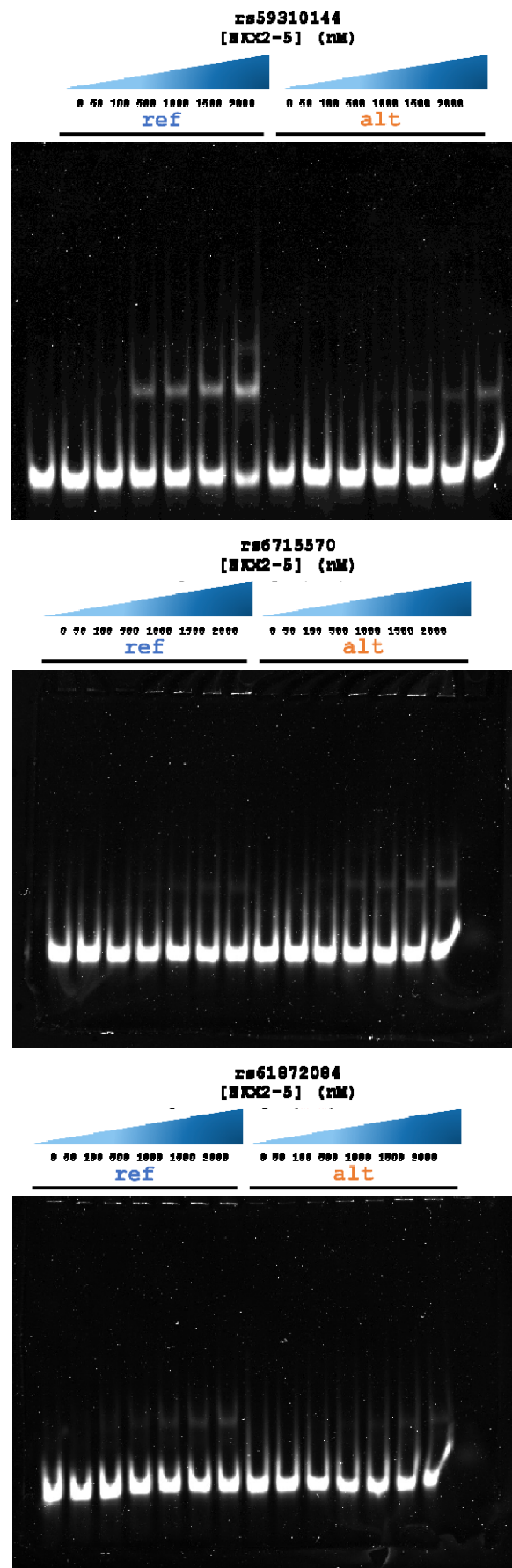
Table 1: Oligonucleotides used in this work.



Supplementary Figure 1: Performance parameters and motif analysis. Performance parameters of **A**) NKX2-5 and **B**) TBX5 as determined by their receiver operating characteristics (ROC) and precision-recall curves. Binding motif for **C**) NKX2-5 and **D**) TBX5 after scoring all possible 11-mers and generating a PWM logo.



Supplementary Figure 2: EMSA analysis of heart footprint and enhancers for NKX2-5 (left) and TBX5 (right). All EMSA were performed and triplicates and regions within dashed were used to generate binding curves.



Supplementary Figure 3: EMSA analysis of three CVD-associated SNPs.

Supplementary Table 2: CVD-associated SNPs with differential gene expression in cardiac tissue and predicted impact on NKX2-5 DNA binding.

Query SNP	LD SNP	Chr	Position	Ref score	Alt score	deltaSVM Score	Gene	Tissue	P value	Association to CVD
s17074987	rs59310144	13	50917644	G (0.56)	A (0.06)	-0.5	<i>RNASEH2B</i>	Heart - Atrial Appendage	2.33E-39	Identified as differentially expressed in CVD risk events
rs6435862	rs6715570	2	214808716	T (0.217)	C (0.92)	0.7	<i>BARD1</i>	Heart - Atrial Appendage	2.39E-25	Associated with development delay and coarctation of aorta in early organogenesis and heart development
s11245347	rs61872084	10	124750493	C (0.44)	T (-0.2)	-0.63	<i>METTL10</i>	Heart - Left Ventricle	6.81E-27	A high concentration of enzymatic product (tHcy) is correlated with kidney dysfunction and CVD