
Preliminary Results on PHD Analysis for RHINO, RSV, and FLU Datasets

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Estimated Quality of Synthesized Predictor Candidates

	EARLY				MIDDLE				LATE			
	pred. rate		error rate		pred. rate		error rate		pred. rate		error rate	
RHINO	4...8 hrs				12...30 hrs				36...96 hrs			
single gene	16/19	0.84	1/16	0.06	16/19	0.84	3/16	0.19	15/19	0.79	1/15	0.07
preselected	13/19	0.68	5/13	0.38	13/19	0.68	1/13	0.08	13/19	0.68	4/13	0.31
gene cluster	17/19	0.89	6/17	0.35	16/19	0.84	5/16	0.31	14/19	0.74	3/14	0.21
RSV	5...29 hrs				36...117.5 hrs				125...165.5 hrs			
single gene	9/20	0.45	2/9	0.22	11/20	0.55	5/11	0.45	13/20	0.65	4/13	0.31
preselected	9/20	0.45	2/9	0.22	10/20	0.50	4/10	0.40	10/20	0.50	2/10	0.20
gene cluster	14/20	0.70	8/14	0.57	14/20	0.70	4/14	0.29	20/20	1.00	7/20	0.35
FLU	5...21.5 hrs				29...53 hrs				60...108 hrs			
single gene	9/17	0.53	3/9	0.33	13/17	0.76	2/13	0.15	15/17	0.88	0/15	0.00
preselected	7/17	0.41	7/7	1.00	10/17	0.59	4/10	0.40	14/17	0.82	0/14	0.00
gene cluster	13/17	0.76	3/13	0.23	11/17	0.65	3/11	0.27	16/17	0.94	0/16	0.00

Predictor Candidates with Errorrates < 0.35

	EARLY	MIDDLE	LATE
RHINO single gene preselected gene cluster	HBD(+) PI3(+) DHX58(+) IGKC(-) 0.16(+) 8.0(-) 0.46(+) 7.0(-) 0.22(+)	PI3(+) HMBOX1(-) NUP85(-) 11.0(+) 0.14(+) 7.0(+) 0.44(-)	HMBOX1(-) ASGR2(+) IFITM1(+) PRKRA(-) CEACAM8(-) 0.4(+) 11.1(-) 0.30(-) 8.0(+)
RSV single gene preselected gene cluster	NDUFA9(-) FUT9(+) PLXDC1(+) SAMHD1(-) IGHA(+)	0.54(+) 0.17(+) 3.1(+) 1.0(+) 8.0(-)	STX17(+) PML(+) TAP1(+) 0.55(+) 1.0(+)
FLU single gene preselected gene cluster	SFRP1(+) SLC39A4(+) 13.0(+) 12.0(-) 1.49(+)	C18orf25(+) SYNE2(-) 3.65(+) 8.0(+)	WARS(+) FCER1G(+) 1.6(-) 8.0(+)

RHINO Predictors

RHINO	EARLY	MIDDLE	LATE
single gene	HBD(+) PI3(+) DHX58(+) IGKC(-)	PI3(+) HMBOX1(-)	HMBOX1(-) ASGR2(+)
preselected	HLA-DRB1(-) DHX58(+) CTSG(-)	NUP85(-)	IFITM1(+) PRKRA(-) CEACAM8(-)
gene cluster	0.16(+) 8.0(-) 0.46(+) 7.0(-) 0.22(+)	11.0(+) 0.14(+) 7.0(+) 0.44(-)	0.4(+) 11.1(-) 0.30(-) 8.0(+)

subcluster 0.4:	CNPY2 CETN2 PARK7 CSTA SEC11A METTL5 CHMP4A DNAJC15 H2AFZ ANXA2 ILF2 NDUFB8 NEDD8 CLEC4A POMP MRPS17 UFC1 PDHB ATP5J PPIB PSMD4 RPL36AL RPS6 SNRPD2 TTC1 TMEM14B DPM1 GADD45GIP1 RBM39
subcluster 0.14:	CEBPG DBF4 GLT8D1 C2orf47 MINPP1
subcluster 0.16:	CNPY2 EIF3M CEBPG CETN2 PTGES3 DBF4 DSTN PARK7 CSTA SEC11A HIBCH C6orf66 METTL5 CHMP4A DNAJC15 SLC25A5 H2AFZ ANXA2 HMG1 ILF2 NDUFB8 NEDD8 CLEC4A POP5 POMP MRPS17 UFC1 PDHB ATP5J PPIB GLT8D1 PSMD4 PTGER2 RFC4 RPL36AL RPS6 MRPL9 SNRPD2 TPD52 TTC1 C2orf47 TMEM14B DPM1 GADD45GIP1 MINPP1 RBM39
subcluster 0.22:	IGLV3-25 IGLV3-19 IGLV3-10 IGLV2-14 IGLV1-40 IGKV4-1 IGKV3-20 IGKC TXNDC5 IGLL3
subcluster 0.30:	DIDO1 NISCH VAMP1 ZNF767
subcluster 0.44:	PDZK1IP1 MYL9 KLF1 GPR44 RNF187 MKRN1 FKBP8 C18orf10 PLEK2 GP9 GUK1 GYPB HAGH HBD HBQ1 KRT1 LTBP1 GLRX5 ERAF PDK2 PPP2R5B BPGM CA1 UBXD1 SHARPIN SELENBP1 CDC34
subcluster 0.46:	PDZK1IP1 MYL9 KLF1 GPR44 RNF187 F13A1 MKRN1 FKBP8 C18orf10 PLEK2 GP9 GUK1 GYPB HAGH HBD HBQ1 KRT1 LTBP1 GLRX5 ERAF PDK2 PF4 PPP2R5B BPGM CA1 UBXD1 SHARPIN SELENBP1 CDC34
cluster 7.0:	TMEM176B TMEM176A
cluster 8.0:	IFI30 NAGK
cluster 11.0:	ZBTB16 DLG5
subcluster 11.1:	CENTG2 ZBTB16 DLG5

RSV Predictors

RSV single gene preselected gene cluster	EARLY	MIDDLE	LATE
	NDUFA9(-) FUT9(+) PLXDC1(+)	ITGB8(+) TWSG1(-)	STX17(+) PML(+)
	SAMHD1(-) IGHA(+)	IRF7(+)	TAP1(+)
	0.48(-) 2.2(-) 0.1(+) 0.70(+) 0.74(+)	0.54(+) 0.17(+) 3.1(+) 1.0(+) 8.0(-)	0.55(+) 1.0(+)

subcluster 0.48:	FKBP5 SAMHD1
subcluster 2.2:	GPR64 DKK2 IL17A NDN
subcluster 0.1:	WDR6 ITPR3 EVL SIGIRR TNFRSF25 CDC25B
subcluster 0.70:	IGKV4-1 IGKC TXNDC5
subcluster 0.74:	C2CD2 NFS1
subcluster 0.54:	TREX1 LY6E
subcluster 0.17:	IRF9 IFI44 TRAFD1 TDRD7 DDX58 LOC26010 GBP1 LAMP3 IFI35 IFIT1 IRF7 MX1 OAS1 OAS3 LAP3 HERC5 RTP4 IFIH1 PARP12 OASL RSAD2 UBE2L6 ISG15 SCO2
subcluster 3.1:	GML APOD NF1
subcluster 1.0:	SAMD4A RHBDD3
cluster 8.0:	TSTA3 CTNNAL1
subcluster 0.55:	TREX1 CNP ALDH3B1 LY6E MARCKSL1 SRC

FLU Predictors

FLU single gene preselected gene cluster	EARLY	MIDDLE	LATE
	SFRP1(+) SLC39A4(+)	C18orf25(+) SYNE2(-)	WARS(+)
	FCGR3B(+) IFI27(+)	LAX1(+) MYD88(+)	FCER1G(+)
	13.0(+) 12.0(-) 1.49(+)	3.65(+) 8.0(+)	1.6(-) 8.0(+)

subcluster 1.6:	PHB2 FBL AKR1B1 BIN1 TRBC1 RANGRF IMPDH2 LCK
subcluster 1.49:	PRPF8 FAM62A ARHGEF18 YLPM1 SMARCA4
subcluster 3.65:	CD46 PDE4B BACH1
cluster 8.0:	ZFYVE26 KIAA0226
subcluster 12.0:	GBP2 IRF1
subcluster 13.0:	RPL37A RPL38