

Supplementary Materials

A novel combined scientific and artistic approach for the advanced characterization of interactomes: the Akirin/Subolesin model

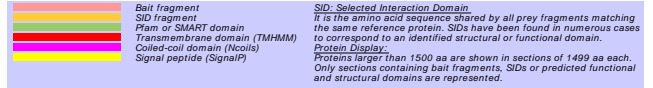
Sara Artigas-Jerónimo, Juan J. Pastor Comín, Margarita Villar, Marinela Contreras, Pilar Alberdi, Israel León Viera, Leandro Soto, Raúl Cordero, James J. Valdés, Alejandro Cabezas-Cruz, Agustín Estrada-Peña, José de la Fuente*

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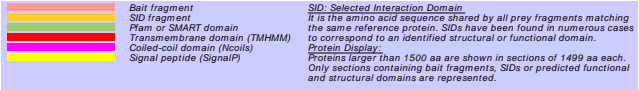
This PDF file includes:

Figures S1 to S6

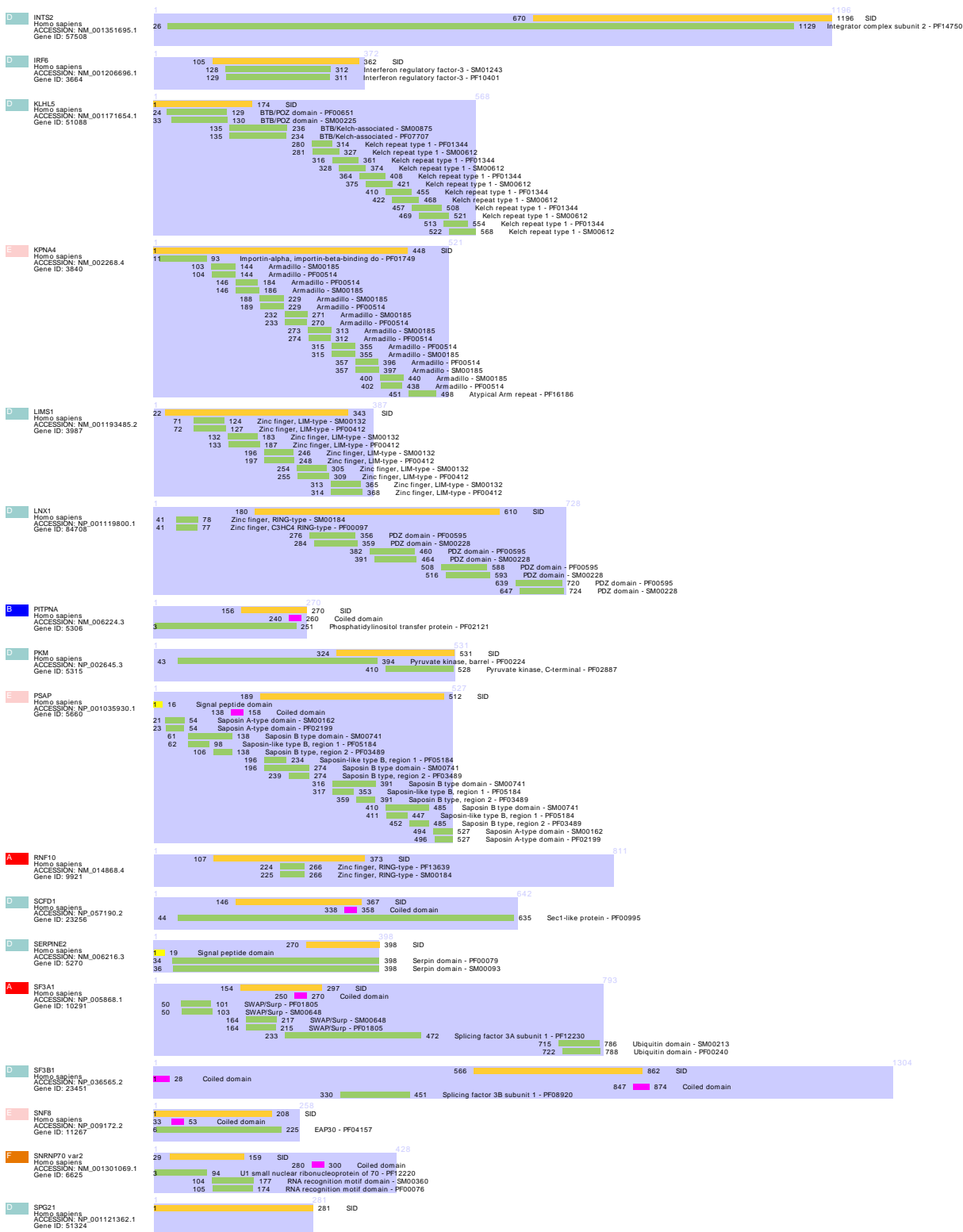
DomSight: PLA_RP6_hgx4913v1 vs. Human Placenta_RP6 (14 Nov 2017) (Bait plasmid(s): hgx4913v1_pB27)



DomSight: PLA_RP6_hgx4913v1 vs. Human Placenta_RP6 (14 Nov 2017)
(Bait plasmid(s): hgx4913v1_pB27)



Legend

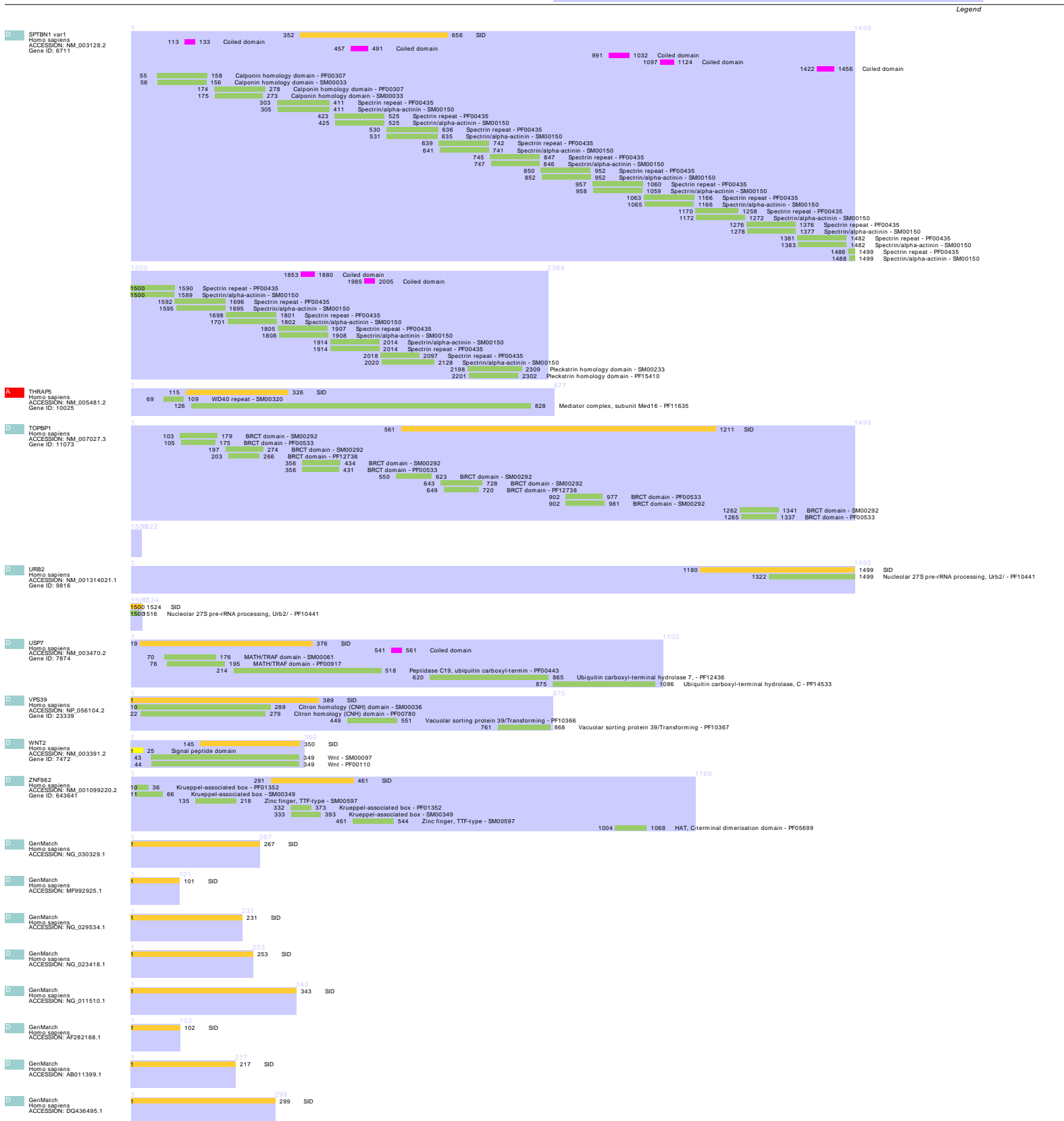


DomSight: PLA_RP6_hgx4913v1 vs. Human Placenta_RP6 (14 Nov 2017)
(Bait plasmid(s): hgx4913v1_pB27)

Legend

- Bait fragment
- SID fragment
- Pfam or SMART domain
- Transmembrane domain (TMHMM)
- Coiled-coil domain (Ncolis)
- Signal peptide (SignalP)

SID: Selected Interaction Domain
It is the amino acid sequence shared by all prey fragments matching the same reference protein. SIDs have been found in numerous cases to correspond to an identified structural or functional domain.
Protein Display:
Proteins larger than 1500 aa are shown in sections of 1499 aa each. Only sections containing bait fragments, SIDs or predicted functional and structural domains are represented.



DomSight: PLA_RP6_hgx4913v1 vs. Human Placenta_RP6 (14 Nov 2017)
(Bait plasmid(s): hgx4913v1_pB27)

Bait fragment

SID fragment

Pfam or SMART domain

Transmembrane domain (TMHMM)

Coiled-coil domain (Ncoils)

Signal peptide (SignalP)

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Legend

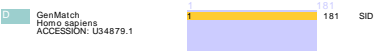


Figure S1. Annotation of the AKR2-protein interacting domains. The annotations were done using DomSight (Hybrigenics Services) to compare the bait fragment and the selected interacting domain (SID) of the prey proteins with the functional and structural domains generated by Pfam, SMART, TMHMM, SignalP, and COILS algorithms.

>NM_058903.6 *Caenorhabditis elegans* Akirin

ATG GCT TGC GGA CTC GCA CTG AAA AGA CCT CTG CAA CAC GAG TAT GAA TCT TTT TTA
M A C G L A L K R P L Q H E Y E S F L
M DRL T SL LS DR LSF RD RFS MRL LSF MF LT FSR LSTD FS SL FL LLS

ACT GAT GAG ACA TAC AAC GGA GAA GCA AAG CGA GCC AGA ACG CAA TGC CCT CCT TTC
T D E T Y N G E A K R A R T Q C P P F
FML DTD FSR FM LS RM SL FS DR RDR R DRMR RFS FMR MF T MRL MRL F

CGT GCT CAA ATG GGA ACT ATT GCC GCT ACA CTG CCG TCA ACC AGC ACA TTT GCT CAG
R A Q M G T I A A T L P S T S T F A Q
RTL DRR MF M SL FML TDF DRMR DRL FM LSF MRR S FMMR SDR FM FL DRL MFR

AAG TTC AAA GAA CAG GAG GAA AGC GTC TTC CAA GCA GCT ACA CTT ATG ACT CGT TTG
K F K E Q E E S V F Q A A T L M T R L
RDR F RD FS MFR FSR FS SDR TLS F MF DR DRL FM LF M FML RTL LSF

TCT CGA AAT CAG CTC AAA ACA TAT CTC AGT TCG GAA GTG AAA AAC CTG CGC AAG CGA
S R N Q L K T Y L S S E V K N L R K R
SL R RMTD MFR LS RD FM LSTD LS STL SR FS TLSF RD RM LSF RDR RDR R

AAA GCC ATT CCA CGC AGC AAT GAC TTT GAT GAT GAT GGA GAT CAA AGA GGA GAC GGA
K A I P R S N D F D D D G D Q R G D G
RD DRMR TDF MR RDR SDR RMTD D FL DTD DTD DTD SL DTD MF RFS SL D SL

TGC AGC TCA AAC TAC TCA AAA GCT TAC AGA GCT CCT TCT TCT CCC AAG TCT GGA TCG
C S S N Y S K A Y R A P S S P K S G S
T SDR S RM LS S RD DRL LS RFS DRL MRL SL SL MRMR RDR SL SL SR

GAT TCC GAG GGT GAA GCA CCA TCA ACA TCT GTG ACT GAT CGT TCC AGC GCC AAG AGG
D S E G E A P S T S V T D R S S A K R
DTD SMR FSR SLTL FS DR MR S FM SL TLSF FML DTD RTL SMR SDR DRMR RDR RSL

GAA TTT ACA ATG GCA AAT GTT CAA ATG ATA TGC GAA CGT CTG CTC AAA CAA CAA GAA
E F T M A N V Q M I C E R L L K Q Q E
FS FL FM M DR RMTD TLF MF M TD T FS RTL LSF LS RD MF MF FS

ATC CGT CTG AGA AAT GAG TTC GAA ATG GTT CTG ACT AAG AAG CTT GAT GAG CAA CAC
I R L R N E F E M V L T K K L D E Q H
TDS RTL LSF RFS RMTD FSR F FS M TLF LSF FML RDR RDR LF DTD FSR MF LT

CAG CAA TAC GTC CAA TTT GCT GCC GAG CAG CTG AAC TCC AAA TGT GTG AGC ACT
Q Q Y V Q F A A E Q L N S K C V S T
MFR MF LS TLS MF FL DRL DRMR FSR MFR LSF RM SMR RD TTL TLSF SDR FML

GGG GAT GAC TAT TCC TAT TCG TAC CTC TCC TAA
G D D Y S Y S Y L S
SLSL DTD D LSTD SMR LSTD SR LS LS SMR STOP

Caenorhabditis elegans Akirin

Violin

8

Vln.

16

Vln.

24

Vln.

32

Vln.

40

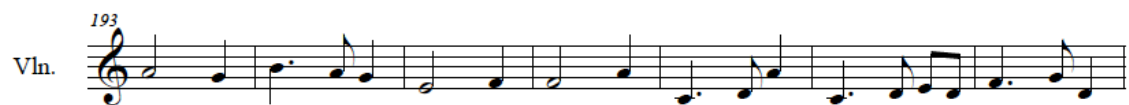
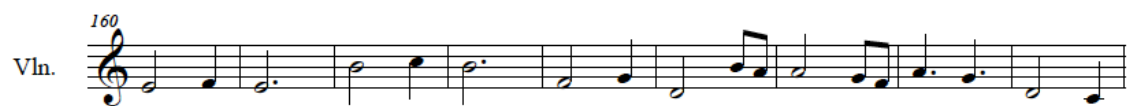
Vln.

48

Vln.

56

Vln.



64
Vln. 

72
Vln. 

80
Vln. 

88
Vln. 

96
Vln. 

104
Vln. 

112
Vln. 

121
Vln. 

129
Vln. 



>NM_139856.4 *Drosophila melanogaster* Akirin

ATG GCC TGT GCA ACC CTG AAA CGA GCC CTA GAC TGG GAG TCG ATG AAC CAG CGG CCT
M A C A T L K R A L D W E S M N Q R P
M DRMR TTL DR FMMR LSF RD R DRMR L D SF FSR SR M RM MFR RSL MRL

CCG AAG CGC CGG CGT TGC AAT CCC TTT GGC CAG GCT GGG AGC AAT GCA GGT CCA GCG
P K R R R C N P F G Q A G S N A G P A
MRR RDR RDR RSL RTL T RMTD MRMR FL SLDR MFR DRL SLSL SDR RMTD DR SLTL MR DR

TCG CCA TCC CGC GAC GGT CCC AGC ACC TCG GCT GGT CTG CCC CAC ACG CCC AGC AAC
S P S R D G P S T S A G L P H T P S N
SR MR SMR RDR D SLTL MRMR SDR FMMR SR DRL SLTL LSF MRMR LT FMR MRMR SDR RM

CGA TTC GCC AAG GAT AGC ACC GAA CCT AGT CCG TTC AGT GAG TCG TCG CTG GCC AAA
R F A K D S T E P S P F S E S S L A K
R F DRMR RDR DTD SDR FMMR FS MRL STL MRR F STL FSR SR SR LSF DRMR RD

ATG TCA CCA GAC AAA ATG GCC GAG AGC TTG TGC AAT GAG ATC AAG AGA CTG CAC AAG
M S P D K M A E S L C N E I K R L H K
M S MR D RD M DRMR FSR SDR LSF T RMTD FSR TDS RDR RFS LSF LT RDR

CGC AAA CAG CTG CCG ATC ACT TCG TCG GCC TTG GAA CGC ATG CAG GAT TCG GAG TCC
R K Q L P I T S S A L E R M Q D S E S
RDR RD MFR LSF MRR TDS FML SR SR DRMR LSF FS RDR M MFR DTD SR FSR SMR

AGC GGA TCG GAG ATG GGT CCA GAG AGT CCG CGC CGC CCG GAC AGT CCA CAG AAC CTG
S G S E M G P E S P R R P D S P Q N L
SDR SL SR FSR M SLTL MR FSR STL MRR RDR RDR MRR D STL MR MFR RM LSF

ATG CGC CAC GGC GAA AAG GCC CTG TTC ACG TTC AAG CAG GTG CAG CTC ATT TGC GAG
M R H G E K A L F T F K Q V Q L I C E
M RDR LT SLDR FS RDR DRMR LSF F FMR F RDR MFR TLSF MFR LS TDF T FSR

AGC ATG ATC AAG GAG CGC GAG AAT CAG CTA AGG GAG CGC TAC GAG TCC GTG CTG ACC
S M I K E R E N Q L R E R Y E S V L T
SDR M TDS RDR FSR RDR FSR RMTD MFR L RSL FSR RDR LS FSR SMR TLSF LSF FMMR

ACC AAG CTG GCC GAG CAG TAC GAT GCC TTT GTC AAG TTC ACA TAT GAT CAG ATA CAG
T K L A E Q Y D A F V K F T Y D Q I Q
FMMR RDR LSF DRMR FSR MFR LS DTD DRMR FL TLS RDR F FM LSTD DTD MFR TD MFR

CGT	CGC	TAC	GAG	GCA	GCG	CCT	AGC	TAC	CTG	TCG	TAA
R	R	Y	E	A	A	P	S	Y	L	S	
RTL	RDR	LS	FSR	DR	DRR	MRL	SDR	LS	LSF	SR	STOP

Drosophila melanogaster Akirin

Violin

8

Vln.

17

Vln.

24

Vln.

31

Vln.

38

Vln.

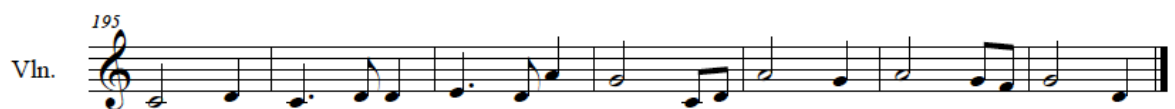
46

Vln.

53

Vln.





>AY652654.1 *Ixodes scapularis* Akirin (Subolesin)

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ATG GCT TGC GCA ACA TTA AAG CGA ACA CAC GAT TGG GAT CCG CTG CAT AGT CCA AAC
M   A   C   A   T   L   K   R   T   H   D   W   D   P   L   H   S   P   N
M   DRL   T   DR FM   LLS RDR   R   FM LT   DTD   SF DTD MRR LSF LTM STL MR   RM

GGA AGA TCG CCC AAA CGA CGG AGA TGT ATG CCT TTG TCG GTC ACA CAA GCA GCG ACT
G   R   S   P   K   R   R   R   C   M   P   L   S   V   T   Q   A   A   T
SL   RFS   SR MRMR RD   R   RSL RFS TTL   M   MRL LSF SR   TLS FM   MF   DR   DRR FML

CCC CCA ACA AGG GCA CAC CAA ATC AAC CCT TCA CCC TTC GGT GAA GTG CCA CCG AAA
P   P   T   R   A   H   Q   I   N   P   S   P   F   G   E   V   P   P   K
MRMR MR FM   RSL DR   LT   MF   TDS RM   MRL   S   MRMR F   SLTL FS TLSF MR MRR   RD

TTA ACT TCA GAG GAG ATA GCG GCC AAC ATT CGG GAG GAA ATG CGA CGT CTG CAG CGG
L   T   S   E   E   I   A   A   N   I   R   E   E   M   R   R   L   Q   R
LLS FML   S   FSR FSR TD   DRR DRMR RM TDF RSL FSR FS   M   R   RTL LSF MFR RSL

CGC AAG CAG CTC TGC TTC TCG TCT CCC   CTG GAG TCG GGC TCC CCG TCG GCG ACT CCC
R   K   Q   L   C   F   S   S   P   L   E   S   G   S   P   S   A   T   P
RDR RDR MFR   LS   T   F   SR   SL MRMR LSF FSR SR SLDR SMR MRR   SR DRR FML MRMR

CCT GCG GCC GAT TGC GGA CCA GCC TCC CCC ACG GGC CTG TCC CCC GGG   GGC   CTG CTG
P   A   A   D   C   G   P   A   S   P   T   G   L   S   P   G   G   L   L
MRL DRR DRMR DTD T SL MR DRMR SMR MRMR FMR SLDR LSF SMR MRMR SLSL SLDR LSFLSF

TCG CCC GTG CGC AGG GAC CAA CCC CTC TTC ACC TTC CGC CAG GTG GGG CTC ATC TGC
S   P   V   R   R   D   Q   P   L   F   T   F   R   Q   V   G   L   I   C
SR MRMR TLSF RDR RSL D   MF MRMR   LS   F FMMR F   RDR MFR TLSF SLSL LS TDS   T

GAG CGC ATG ATG AAG GAG CGC GAG AGC CAG ATA CGC GAC GAG TAC GAC CAC GTT CTG
E   R   M   M   K   E   R   E   S   Q   I   R   D   E   Y   D   H   V   L
FSR RDR   M   M   RDR FSR RDR FSR SDR MFR TD   RDR   D   FSR LS   D   LT   TLF LSF

TCT GCC AAG CTG GCA GAG CAG TAC GAC ACA TTT GTC AAG TTT ACG TAC GAC CAA ATT
S   A   K   L   A   E   Q   Y   D   T   F   V   K   F   T   Y   D   Q   I
SL DRMR RDR LSF   DR FSR MFR LS   D   FM   FL   TLS RDR FL   FMR LS   D   MF   TDF

CAG AAG CGG TTT GAG GGT GCC ACT CCA AGC TAT TTG TCA TAA
Q   K   R   F   E   G   A   T   P   S   Y   L   S
MFR RDR RSL FL FSR SLTL DRMR FML MR SDR LST DLSF S STOP

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Ixodes scapularis Akirin (Subolesin)

$\text{♩} = 150$

Violin

8

Vln.

16

Vln.

24

Vln.

32

Vln.

40

Vln.

48

Vln.

56

Vln.

The image displays a musical score for a violin, consisting of eight staves. The first staff is labeled 'Violin' and includes a tempo marking of a quarter note equal to 150 beats per minute. The subsequent seven staves are each labeled 'Vln.' and begin with a measure number (8, 16, 24, 32, 40, 48, 56) indicating the start of a new system. The music is written in treble clef with a 3/4 time signature. The notation includes various note values such as quarter, eighth, and sixteenth notes, as well as rests and beams connecting notes. The key signature is not explicitly shown, but the notes are primarily natural, suggesting a key of C major or a similar key with no sharps or flats.



133
Vln. 

141
Vln. 

149
Vln. 

157
Vln. 

165
Vln. 

173
Vln. 

180
Vln. 

>NM_001092015.1 *Xenopus laevis* Akirin2

```

ATG GCG TGT GGA GCC ACA CTT AAA AGG ACT ATC GAA TTC GAT CCT CTG TTG AGC CCA
M   A   C   G   A   T   L   K   R   T   I   E   F   D   P   L   L   S   P
M   DRR TTL SL DRMR FM   LF   RD   RSL FML TDS   FS   F   DTD MRL LSF LSF SDR   MR

GCA GCG TCT CCC AAG AGA AGA AGA TGC GCC CCC CTC TCT CCC TCG GGG   CCC TCC CCA
A   A   S   P   K   R   R   R   C   A   P   L   S   P   S   G   P   S   P
DR   DRR SL MRMR RDR RFS RFS RFS   T DRMR MRMR LS   SL MRMR SR SLSL MRMR SMR MR

CAG   AAA TAC CTT CGC TTG GAA CCT TCA CCG TTC GGG GAG GTG TCC CCT CGT CTT ACT
Q     K   Y   L   R   L   E   P   S   P   F   G   E   V   S   P   R   L   T
MFR  RD   LS   LF   RDR LSF FS   MRL   S   MRR   F SLSL FSR TLSF SMR MRL RTL LF FML

GCA GAG CAA ATC CTT TAT AAC ATT AAA CAA GAG TAT AAA CGA ATG CAA AAG CGA AGA
A   E   Q   I   L   Y   N   I   K   Q   E   Y   K   R   M   Q   K   R   R
DR   FSR MF   TDS LF LSTD RM   TDF   RD   MF FSR LSTD RD   R   M   MF   RDR   R   RFS

CAT TTA GAA AGC AGC TTC CAA CCA ACA GAC CCC TGC TGC TCC AGC GAG GGC CAG CCA
H   L   E   S   S   F   Q   P   T   D   P   C   C   S   S   E   G   Q   P
LTM LLS FS   SDR SDR   F   MF   MR   FM   D MRMR   T   T   SMR SDR FSR SLDR MFR MR

CAG ACT TTC ATC CCA TCT GGG CCG ACT TTA CCA GGC ACA TCA GCT ACA TCT CCA TTA
Q   T   F   I   P   S   G   P   T   L   P   G   T   S   A   T   S   P   L
MFR FML   F   TDS MR   SL SLSL MRR FML LLS MR SLDR   FM   S   DRL   FM SL   MR   LLS

AGA AAG GAG CAG CCA TTG TTT TCA TTA AGG CAA GTA GGC ATG ATA TGT GAA CGA CTG
R   K   E   Q   P   L   F   S   L   R   Q   V   G   M   I   C   E   R   L
RFS RDR FSR MFR MR   LSF FL   S   LLS RSL MF   TL SLDR   M   TD   TTL FS   R   LSF

CTT AAA GAA CGC GAG GAT AAT GTC CGT GAG GAA TAT GAA GAA ATA TTG ACC ACA AAA
L   K   E   R   E   D   N   V   R   E   E   Y   E   E   I   L   T   T   K
LF   RD   FS   RDR FSR DTD RMTD TLS RTL FSR FS LSTD FS   FS   TD   LSF FMMR FM RD

CTC GCA GAA CAA TAT GAT GCT TTT GTG AAA TTC ACA CAT GAT CAG ATA ATG CGA CGA
L   A   E   Q   Y   D   A   F   V   K   F   T   H   D   Q   I   M   R   R
LS   DR   FS   MF LSTD DTD DRL FL TLSF RD   F   FM   LTM DTD MFR TD   M   R   R

TTT GGA GAA CAG CCA GCT AGC TAC GTT TCA TGA
F   G   E   Q   P   A   S   Y   V   S
FL   SL FS   MFR   MR DRL SDR LS   TLF   S   STOP

```

Xenopus laevis Akirin2

$\text{♩} = 150$

Violin

8

Vln.

16

Vln.

24

Vln.

32

Vln.

39

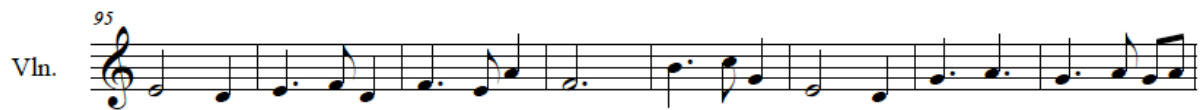
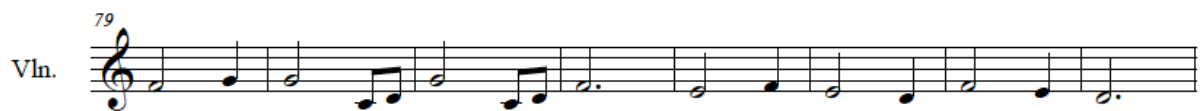
Vln.

47

Vln.

55

Vln.





>GQ247760.1 *Salvelinus alpinus* Akirin2

ATG GCT TGT GGG GCT ACT TTG AAA AGG ACT ATG GAT TTC GAT CCA TTG ATG AAC CAG
M A C G A T L K R T M D F D P L M N Q
M DRL TTL SLSL DRL FML LSF RD RSL FML M DTD F DTD MR LSF M RM MFR

GCG TCC CCC AAA AGG AGG AGG TGC ACC CCA ATG TCT CAA GCC GCC TCG ACC TCA TCA
A S P K R R R C T P M S Q A A S T S S
DRR SMR MRMR RD RSL RSL RSL T FMMR MR M SL MF DRMR DRMR SR FMMR S S

CCC CAG AAA TAT CTG CGT ATG GAG CCC TCA CCA TTT GGA GAA GTG TCG TCC AGA CTC
P Q K Y L R M E P S P F G E V S S R L
MRMR MFR RD LSTD LSF RTL M FSR MRMR S MR FL SL FS TLSF SR SMR RFS LS

ACA ACG GAG CAA ATC CTG CAC AAT ATC AAG CAA GAG TAC AAG CGG ATG CAG AAG CGA
T T E Q I L H N I K Q E Y K R M Q K R
FM FMR FSR MF TDS LSF LT RMTD TDS RDR MF FSR LS RDR RSL M MFR RDR R

AGG CAC CTG GAG AAC AGC TTT CAG CAG ACC GAG GGC TGT TGT CCC CTG GAG TCA CAA
R H L E N S F Q Q T E G C C P L E S Q
RSL LT LSF FSR RM SDR FL MFR MFR FMMR FSR SLDR TTL TTL MRMR LSF FSR S MF

CCC CAT AGC TCC ATC CTT AAT GGA TCC AGT CTG CCA GGA ACA TCT TCT GGT GCC
ATC
P H S S I L N G S S L P G T S S G A I
MRMR LTM SDR SMR TDS LF RMTD SL SMR STL LSF MR SL FM SL SL SLTL DRMR TDS

TCC CCA TCT AGA AAA GAG CAA CCT CTA TTT ACC TTG AGA CAG GTT GGG ATG ATC TGT
S P S R K E Q P L F T L R Q V G M I C
SMR MR SL RFS RD FSR MF MRL L FL FMMR LSF RFS MFR TLF SLSL M TDS TTL

GAA CGA CTA CTT AAA GAA CGA GAG GAG AAG ATA AGG GAA GAA TAT GAC GAA ATA TTG
E R L L K E R E E K I R E E Y D E I L
FS R L LF RD FS R FSR FSR RDR TD RSL FS FS LSTD D FS TD LSF

ACA ACA AAA CTA GCA GAG CAA TAT GAT GCT TTC GTT AAG TTC ACT CAC GAT CAG CTA
T T K L A E Q Y D A F V K F T H D Q L
FM FM RD L DR FSR MF LSTD DTD DRL F TLF RDR F FML LT DTD MFR L

ATG CGG CGA TTT GGA GAG CAA CCT GCT AGC TAT GTT TCC TGA
M R R F G E Q P A S Y V S
M RSL R FL SL FSR MF MRL DRL SDR LSTD TLF SMR STOP

Salvelinus alpinus Akirin2

$\text{♩} = 150$

Violin

Vln.

Vln.

Vln.

Vln.

Vln.

Vln.

Vln.

64 Vln. 

72 Vln. 

80 Vln. 

87 Vln. 

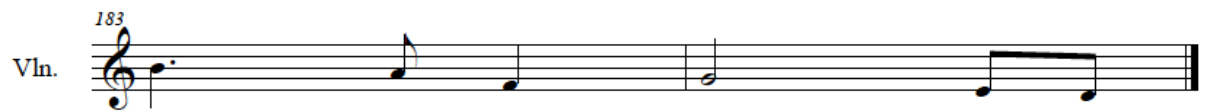
95 Vln. 

103 Vln. 

111 Vln. 

119 Vln. 

127 Vln. 



>NM_018064.3 *Homo sapiens* Akirin2

ATG GCG TGC GGA GCC ACT CTG AAA AGG ACT CTG GAT TTC GAC CCG CTG TTG AGC CCG
M A C G A T L K R T L D F D P L L S P
M DRR T SL DRMR FML LSF RD RSL FML LSF DTD F D MRR LSF LSF SDR MRR

GCG TCC CCG AAG CGC AGG CGA TGT GCG CCA TTG TCG GCG CCC ACC TCG GCC GCT GCC
A S P K R R R C A P L S A P T S A A A
DRR SMR MRR RDR RDR RSL R TTL DRR MR LSF SR DRR MRMR FMMR SR DRMR DRL
DRMR

TCC CCG TTG TCG GCG GCC GCG GCC ACC GCC GCC TCC TTC TCC GCT GCG GCC GCC TCG
S P L S A A A A T A A S F S A A A A S
SMR MRR LSF SR DRR DRMR DRR DRMR FMMR DRMR DRMR SMR F SMR DRL DRR DRMR DRMR SR

CCG CAG AAG TAT CTC CGA ATG GAG CCA TCC CCC TTC GGC GAC GTC TCC TCC CGC CTC
P Q K Y L R M E P S P F G D V S S R L
MRR MFR RDR LSTD LS R M FSR MR SMR MRMR F SLDR D TLS SMR SMR RDR LS

ACC ACA GAA CAA ATT CTG TAC AAC ATA AAA CAA GAG TAT AAA CGA ATG CAG AAG AGA
T T E Q I L Y N I K Q E Y K R M Q K R
FMMR FM FS MF TDF LSF LS RM TD RD MF FSR LSTD RD R M MFR RDR RFS

AGA CAT TTA GAA ACG AGT TTC CAA CAG ACA GAT CCG TGT TGT ACT TCT GAT GCA CAG
R H L E T S F Q Q T D P C C T S D A Q
RFS LTM LLS FS FMR STL F MF MFR FM DTD MRR TTL TTL FML SL DTD DR MFR

CCA CAT GCA TTT CTC CTC AGT GGA CCA GCT TCA CCA GGG ACT TCA TCT GCA GCA TCC
P H A F L L S G P A S P G T S S A A S
MR LTM DR FL LS LS STL SL MR DRL S MR SLDR FML S SL DR DR SMR

TCA CCA TTA AAA AAA GAA CAG CCC TTA TTT ACT CTA CGG CAG GTT GGG ATG ATC TGT
S P L K K E Q P L F T L R Q V G M I C
S MR LLS RD RD FS MFR MRMR LLS FL FML L RDR MFR TLF SL SL M TDS TTL

GAA CGT TTG TTG AAA GAA CGT GAA GAG AAA GTT CGA GAA GAA TAT GAA GAA ATA TTG
E R L L K E R E E K V R E E Y E E I L
FS RTL LSF LSF RD FS RTL FS FSR RD TLF R FS FS LSTD FS FS TD LSF

AAC ACA AAA CTT GCA GAA CAA TAT GAT GCG TTT GTG AAG TTT ACG CAT GAT CAA ATA
N T K L A E Q Y D A F V K F T H D Q I
RM FM RD LF DR FS MF LSTD DTD DRR FL TLSF RDR FL FMR LTM DTD MF TD

ATG	CGA	CGA	TAT	GGA	GAA	CAG	CCT	GCT	AGC	TAT	GTT	TCA	TGA
M	R	R	Y	G	E	Q	P	A	S	Y	V	S	
M	R	R	LSTD	SL	FS	MFR	MRL	DRL	SDR	LSTD	TLF	S	STOP

Homo sapiens Akirin2

$\text{♩} = 150$

Soprano

8

S

16

S

23

S

31

S

38

S

45

S

52

S

59

S

S

Musical notation for the Soprano part, measures 67 through 78. The melody consists of eighth and quarter notes, mostly moving upwards.

75

S



Musical notation for the Soprano part, measures 75-84. The notation is on a single staff with a treble clef. The notes are: G4 (quarter), A4-B4 (eighth beamed), B4 (quarter), A4-G4 (eighth beamed), F#4 (quarter), E4 (quarter), D4 (half), C4 (half), B3 (quarter), A3 (quarter), G3 (half), F#3 (half), E3 (quarter), D3 (quarter), C3 (half), B2 (half).

83

S

91

S



99

S

Measures 99 and 100 of the Soprano part. Measure 99 contains a half note G4, a quarter note A4, a quarter note B4, a quarter note C5, a quarter note B4, a quarter note A4, and a half note G4. Measure 100 contains a half note F#4, a quarter note E4, a quarter note D4, a quarter note C4, a quarter note B3, a quarter note A3, and a half note G3.

107

S

115

S

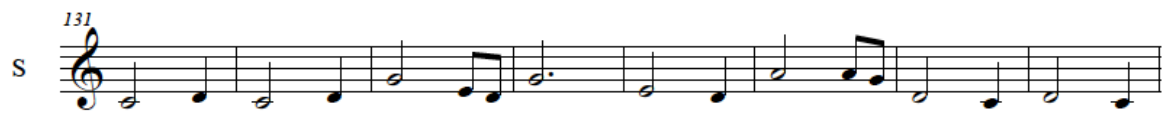


123

S



Measures 123-125 of the Soprano part. Measure 123: G4 (quarter), A4 (quarter), B4 (quarter), C5 (quarter). Measure 124: B4 (quarter), A4 (quarter), G4 (quarter), F#4 (quarter). Measure 125: E4 (half), D4 (half).



>NM_014868.4 *Homo sapiens* ring finger protein 10 (RNF10)

ATG CCG CTG AGC TCC CCC AAC GCC GCC GCC ACC GCC TCC GAC ATG GAC AAG AAC AGC
 M P L S S P N A A A T A S D M D K N S
 M MRR LSF SDR SMR MRMR RM DRMR DRMR DRMR FMMR DRMR SMR D M D RDR RM SDR

 GGC TCC AAC AGC TCC TCC GCC TCT TCG GGC AGC AGC AAA GGG CAA CAG CCG CCC CGC
 G S N S S S A S S G S S K G Q Q P P R
 SLDR SMR RM SDR SMR SMR DRMR SL SR SLDR SDR SDR RD SLSL MF MFR MRR MRMR RDR

 TCC GCC TCG GCG GGG CCA GCC GGC GAG TCT AAA CCC AAG AGC GAT GGA AAG AAC TCC
 S A S A G P A G E S K P K S D G K N S
 SMR DRMR SR DRR SLSL MR DRMR SLDR FSR SL RD MRMR RDR SDR DTD SL RDR RM SMR

 AGT GGA TCC AAG CGT TAT AAT CGC AAA CGT GAA CTT TCC TAC CCC AAA AAT GAA AGT
 S G S K R Y N R K R E L S Y P K N E S
 STL SL SMR RDR RTL LSTD RMTD RDR RD RTL FS LF SMR LS MRMR RD RMTD FS STL

 TTT AAC AAC CAG TCC CGT CGC TCC AGT TCA CAG AAA AGC AAG ACT TTT AAC AAG ATG
 F N N Q S R R S S S Q K S K T F N K M
 FL RM RM MFR SMR RTL RDR SMR STL S MFR RD SDR RDR FML FL RM RDR M

 CCT CCT CAA AGG GGC GGC GGC AGC AGC AAA CTC TTT AGC TCT TCT TTT AAT GGT GGA
 P P Q R G G G S S K L F S S S F N G G
 MRL MRL MF RSL SLDR SLDR SLDR SDR SDR RD LS FL SDR SL SL FL RMTD SLTL SL

 AGA CGA GAT GAG GTA GCA GAG GCT CAA CGG GCA GAG TTT AGC CCT GCC CAG TTC TCT
 R R D E V A E A Q R A E F S P A Q F S
 RFS R DTD FSR TL DR FSR DRL MF RSL DR FSR FL SDR MRL DRMR MFR F SL

 GGT CCT AAG AAG ATC AAC CTG AAC CAC TTG TTG AAT TTC ACT TTT GAA CCC CGT GGC
 G P K K I N L N H L L N F T F E P R G
 SLTL MRL RDR RDR TDS RM LSF RM LT LSF LSF RMTD F FML FL FS MRMR RTL SLDR

 CAG ACG GGT CAC TTT GAA GGC AGT GGA CAT GGT AGC TGG GGA AAG AGG AAC AAG TGG
 Q T G H F E G S G H G S W G K R N K W
 MFR FMR SLTL LT FL FS SLDR STL SL LTM SLTL SDR SF SL RDR RSL RM RDR SF

 GGA CAT AAG CCT TTT AAC AAG GAA CTC TTT TTA CAG GCC AAC TGC CAA TTT GTG GTG
 G H K P F N K E L F L Q A N C Q F V V
 SL LTM RDR MRL FL RM RDR FS LS FL LLS MFR DRMR RM T MF FL TLSF TLSF

TCT GAA GAC CAA GAC TAC ACA GCT CAT TTT GCT GAT CCT GAT ACA TTA GTT AAC TGG
S E D Q D Y T A H F A D P D T L V N W
SL FS D MF D LS FM DRL LTM FL DRL DTD MRL DTD FM LLS TLF RM SF

GAC TTT GTG GAA CAA GTG CGC ATT TGT AGC CAT GAA GTG CCA TCT TGC CCA ATA TGC
D F V E Q V R I C S H E V P S C P I C
D FL TLSF FS MF TLSF RDR TDF TTL SDR LTM FS TLSF MR SL T MR TD T

CTC TAT CCA CCT ACT GCA GCC AAG ATA ACC CGT TGT GGA CAC ATC TTC TGC TGG GCA
L Y P P T A A K I N R C G H I F C W A
LS LSTD MR MRL FML DR DRMR RDR TD RM RTL TTL SL LT TDS F T SF DR

TGC ATC CTG CAC TAT CTT TCA CTG AGT GAG AAG ACG TGG AGT AAA TGT CCC ATC TGT
C I L H Y L S L S E K T W S K C P I C
T TDS LSF LT LSTD LF S LSF STL FSR RDR FMR SF STL RD TTL MRMR TDS TTL

TAC AGT TCT GTG CAT AAG AAG GAT CTC AAG AGT GTT GTT GCC ACA GAG TCA CAT CAG
Y S S V H K K D L K S V V A T E S H Q
LS STL SL TLSF LTM RDR RDR DTD LS RDR STL TLF TLF DRMR FM FSR S LTM MFR

TAT GTT GTT GGT GAT ACC ATT ACG ATG CAG CTG ATG AAG AGG GAG AAA GGG GTG TTG
Y V V V D T I T M Q L M K R E K G V L
LSTD TLF TLF TLF DTD FMMR TDF FMR M MFR LSF M RDR RSL FSR RD SLSL TLSF LSF

GTG GCT TTG CCC AAA TCC AAA TGG ATG AAT GTA GAC CAT CCC ATT CAT CTA GGA GAT
V A L P K S K W M N V D H P I H L G D
TLSF DRL LSF MRMR RD SMR RD SF M RMTD TL D LTM MRMR TDF LTM L SL DTD

GAA CAG CAC AGC CAG TAC TCC AAG TTG CTG CTG GCC TCT AAG GAG CAG GTG CTG CAC
E Q H S Q Y S K L L L A S K E Q V L H
FS MFR LT SDR MFR LS SMR RDR LSF LSF LSF DRMR SL RDR FSR MFR TLSF LSF LT

CGG GTA GTT CTG GAG GAG AAA GTA GCA CTA GAG CAG CAG CTG GCA GAG GAG AAG CAC
R V V L E E K V A L E Q Q L A E E K H
RSL TL TLF LSF FSR FSR RD TL DR L FSR MFR MFR LSF DR FSR FSR RDR LT

ACT CCC GAG TCC TGC TTT ATT GAG GCA GCT ATC CAG GAG CTC AAG ACT CGG GAA GAG
T P E S C F I E A A I Q E L K T R E E
FML MRMR FSR SMR T FL TDF FSR DR DRL TDS MFR FSR LS RDR FML RSL FS FSR

GCT CTG TCG GGA TTG GCC GGA AGC AGA AGG GAG GTC ACT GGT GTT GTG GCT GCT CTG
 A L S G L A G S R R E V T G V V A A L
 DRL LSF SR SL LSF DRMR SL SDR RFS RSL FSR TLS FML SLTL TLF TLSF DRL DRL LSF

 GAA CAA CTG GTG CTG ATG GCT CCC TTG GCG AAG GAG TCT GTT TTT CAA CCC AGG AAG
 E Q L V L M A P L A K E S V F Q P R K
 FS MF LSF TLSF LSF M DRL MRMR LSF DRR RDR FSR SL TLF FL MF MRMR RSL RDR

 GGT GTG CTG GAG TAT CTG TCT GCC TTC GAT GAA GAA ACC ACG GAA GTT TGT TCT CTG
 G V L E Y L S A F D E E T T E V C S L
 SLTL TLSF LSF FSR LSTD LSF SL DRMR F DTD FS FS FMMR FMR FS TLF TTL SL LSF

 GAC ACT CCT TCT AGA CCT CTT GCT CTC CCT CTG GTA GAA GAG GAG GAA GCA GTG TCT
 D T P S R P L A L P L V E E E E A V S
 D FML MRL SL RFS MRL LF DRL LS MRL LSF TL FS FSR FSR FS DR TLSF SL

 GAA CCA GAG CCT GAG GGG TTG CCA GAG GCC TGT GAT GAC TTG GAG TTA GCA GAT GAC
 E P E P E G L P E A C D D L E L A D D
 FS MR FSR MRL FSR SLSL LSF MR FSR DRMR TTL DTD D LSF FSR LLS DR DTD D

 AAT CTT AAA GAG GGG ACC ATT TGC ACT GAG TCC AGC CAG CAG GAA CCC ATC ACC AAG
 N L K E G T I C T E S S Q Q E P I T K
 RMTD LF RD FSR SLSL FMMR TDF T FML FSR SMR SDR MFR MFR FS MRMR TDS FMMR RDR

 TCA GGC TTC ACA CGC CTC AGC AGC TCT CCT TGT TAC TAC TTT TAC CAA GCG GAA GAT
 S G F T R L S S S P C Y Y F Y Q A E D
 S SLDR F FM RDR LS SDR SDR SL MRL TTL LS LS FL LS MF DRR FS DTD

 GGA CAG CAT ATG TTC CTG CAC CCT GTG AAT GTG CGC TGC CTC GTG CGG GAG TAC GGC
 G Q H M F L H P V N V R C L V R E Y G
 SL MFR LTM M F LSF LT MRL TLSF RMTD TLSF RDR T LS TLSF RSL FSR LS SLDR

 AGC CTG GAG AGG AGC CCC GAG AAG ATC TCA GCA ACT GTG GTG GAG ATT GCT GGC TAC
 S L E R S P E K I S A T V V E I A G Y
 SDR LSF FSR RSL SDR MRMR FSR RDR TDS S DR FML TLSF TLSF FSR TDF DRL SLDR LS

 TCC ATG TCT GAG GAT GTT CGA CAG CGT CAC AGA TAT CTC TCT CAC TTG CCA CTC ACC
 S M S E D V R Q R H R Y L S H L P L T
 SMR M SL FSR DTD TLF R MFR RTL LT RFS LSTD LS SL LT LSF MR LS FMMR

TGT GAG TTC AGC ATC TGT GAA CTG GCT TTG CAA CCT CCT GTG GTC TCT AAG GAA ACC
 C E F S I C E L A L Q P P V V S K E T
 TTL FSR F SDR TDS TTL FS LSF DRL LSF MF MRL MRL TLSF TLS SL RDR FS FMMR

CTA GAG ATG TTC TCA GAT GAC ATT GAG AAG AGG AAA CGT CAG CGC CAA AAG AAG GCT
 L E M F S D D I E K R K R Q R Q K K A
 L FSR M F S DTD D TDF FSR RDR RSL RD RTL MFR RDR MF RDR RDR DRL

CGG GAG GAA CGC CGC CGA GAG CGC AGG ATT GAG ATA GAG GAG AAC AAG AAA CAG GGC
 R E E R R R E R R I E I E E N K K Q G
 RSL FSR FS RDR RDR R DSR RDR RSL TDF FSR TD FSR FSR RM RDR RD MFR SLDR

AAG TAC CCA GAA GTC CAC ATT CCC CTC GAG AAT CTA CAG CAG TTT CCT GCC TTC AAT
 K Y P E V H I P L E N L Q Q F P A F N
 RDR LS MR FS TLS LT TDF MRMR LS FSR RMTD L MFR MFR FL MRL DRMR F RMTD

TCT TAT ACC TGC TCC TCT GAT TCT GCT TTG GGT CCC ACC AGC ACC GAG GGC CAT GGG
 S Y T C S S D S A L G P T S T E G H G
 SL LSTD FMMR T SMR SL DTD SL DRL LSF SLTL MRMR FMMR SDR FMMR FSR SLDR LTM SLSL

GCC CTC TCC ATT TCT CCT CTC AGC AGA AGT CCA GGT TCC CAT GCA GAC TTT CTG CTG
 A L S I S P L S R S P G S H A D F L L
 DRMR LS SMR TDF SL MRL LS SDR RFS STL MR SLTL SMR LTM DR D FL LSF LSF

ACC CCT CTG TCA CCC ACT GCC AGT CAG GGC AGT CCC TCA TTC TGC GTT GGG AGT CTG
 T P L S P T A S Q G S P S F C V G S L
 FMMR MRL LSF S MRMR FML DRMR STL MFR SLDR STL MRMR S F T TLF SLSL STL LSF

GAA GAA GAC TCT CCC TTC CCT TCC TTT GCC CAG ATG CTG AGG GTT GGA AAA GCA AAA
 E E D S P F P S F A Q M L R V G K A K
 FS FS D SL MRMR F MRL SMR FL DRMR MFR M LSF RSL TLF SL RD DR RD

GCA GAT GTG TGG CCC AAA ACT GCT CCA AAG AAA GAT GAG AAC AGC TTA GTT CCT CCT
 A D V W P K T A P K K D E N S L V P P
 DR DTD TLSF SF MRMR RD FML DRL MR RDR RD DTD FSR RM SDR LLS TLF MRL MRL

GCC CCT GTG GAC AGC GAC GGG GAG AGT GAT AAT TCA GAC CGT GTT CCT GTG CCC AGT
 A P V D S D G E S D N S D R V P V P S
 DRMR MRL TLSF D SDR D SLSL FSR STL DTD RMTD S D RTL TLF MRL TLSF MRMR STL

TTT	CAA	AAT	TCC	TTC	AGC	CAA	GCT	ATT	GAA	GCA	GCC	TTC	ATG	AAA	CTG	GAC	ACA	CCA
F	Q	N	S	F	S	Q	A	I	E	A	A	F	M	K	L	D	T	P
FL	MF	RMTD	SMR	F	SDR	MF	DRL	TDF	FS	DR	DRMR	F	M	RD	LSF	D	FM	MR
GCT	ACT	TCA	GAT	CCC	CTC	TCT	GAA	GAG	AAA	GGA	GGA	AAG	AAA	AGA	AAA	AAA	CAG	AAA
A	T	S	D	P	L	S	E	E	K	G	G	K	K	R	K	K	Q	K
DRL	FML	S	DTD	MRMR	LS	SL	FS	FSR	RD	SL	SL	RDR	RD	RTL	RD	RD	MFR	RD
CAG	AAG	CTC	CTG	TTC	AGC	ACC	TCA	GTC	GTC	CAC	ACC	AAG	TGA					
Q	K	L	L	F	S	T	S	V	V	H	T	K						
MFR	RDR	LS	LSF	F	SDR	FMMR	S	TLS	TLS	LT	FMMR	RDR	STOP					

Homo sapiens ring finger protein 10 (RNF10)

$\text{♩} = 150$

Violin

Vln.

Vln.

Vln.

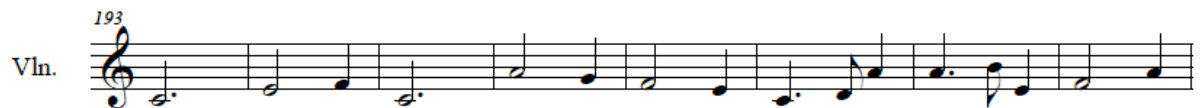
Vln.

Vln.

Vln.

Vln.





201

Vln.

209

Vln.

217

Vln.

225

Vln.

233

Vln.

241

Vln.

250

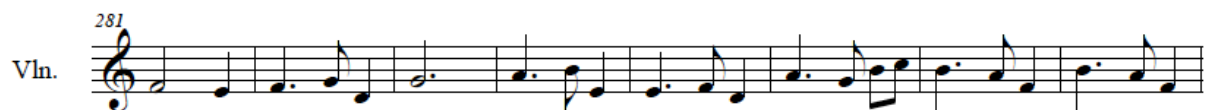
Vln.

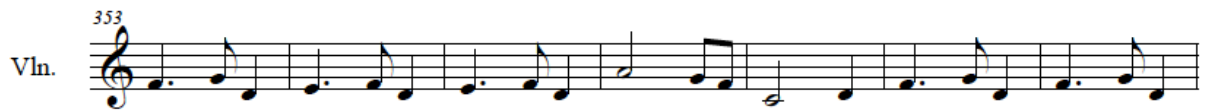
258

Vln.

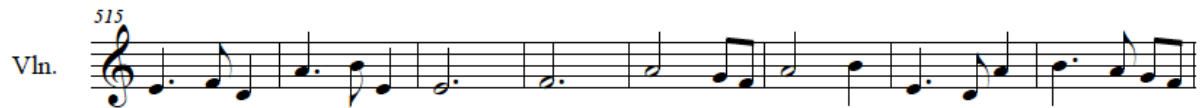
266

Vln.











624
Vln. 

632
Vln. 

640
Vln. 

648
Vln. 

656
Vln. 

663
Vln. 

670
Vln. 

678
Vln. 

686
Vln. 





>NM_005481.2 *Homo sapiens* mediator complex subunit 16 (THRAP5)

ATG TGT GAT TTG CGG CGG CCA GCG GCA GGT GGG ATG ATG GAC TTG GCC TAC GTC TGT
M C D L R R P A A G G M M D L A Y V C
M TTL DTD LSF RSL RSL MR DRR DR SLTL SLSL M M D LSF DRMR LS TLS TTL

GAG TGG GAG AAA TGG TCC AAG AGC ACC CAC TGC CCA TCG GTG CCC CTG GCC TGC GCC
E W E K W S K S T H C P S V P L A C A
FSR SF FSR RD SF SMR RDR SDR FMMR LT T MR SR TLSF MRMR LSR DRMR T DRMR

TGG TCC TGC CGA AAT CTC ATC GCC TTC ACC ATG GAC CTG CGC AGC GAT GAC CAG GAC
W S C R N L I A F T M D L R S D D Q D
SF SMR T R RMTD LS TDS DRMR F FMMR M D LSF RDR SDR DTD D MFR D

CTG ACC CGC ATG ATC CAC ATC CTG GAC ACG GAG CAC CCC TGG GAC CTG CAC TCG ATC
L T R M I H I L D T E H P W D L H S I
LSF FMMR RDR M TDS LT TDS LSF D FMR FSR LT MRMR SF D LSF LT SR TDS

CCC TCA GAG CAC CAC GAG GCC A TC ACC TGC CTG GAG TGG GAC CAG TCA GGC TCC CGG
P S E H H E A I T C L E W D Q S G S R
MRMR S FSR LT LT FSR DRMR TDS FMMR T LSF FSR SF D MFR S SLDR SMR RSL

CTC CTG TCA GCA GAT GCC GAC GGG CAG ATC AAG TGC TGG AGC ATG GCG GAC CAC CTG
L L S A D A D G Q I K C W S M A D H L
LS LSF S DR DTD DRMR D SLSL MFR TDS RDR T SF SDR M DRR D LT LSF

GCT AAT AGC TGG GAG AGC TCA GTG GGC AGC CTA GTG GAG GGG GAC CCC ATT GTG GCC
A N S W E S S V G S L V E G D P I V A
DRL RMTD SDR SF FSR SDR S TLSF SLDR SDR L TLSF FSR SLSL D MRMR TDF TLSF DRMR

CTG TCC TGG CTG CAC AAT GGT GTG AAA CTG GCC CTG CAC GTG GAG AAG TCG GGC GCC
L S W L H N G V K L A L H V E K S G A
LSF SMR SF LSF LT RMTD SLTL TLSF RD LSF DRMR LSF LT TLSF FSR RDR SR SLDR DRMR

TCC AGC TTC GGG GAG AAG TTC TCC CGA GTC AAG TTC TCA CCG TCG CTC ACG CTG TTC
S S F G E K F S R V K F S P S L T L F
SMR SDR F SLSL FSR RDR F SMR R TLS RDR F S MRR SR LS FMR LSF F

GGC GGC AAG CCC ATG GAG GGC TGG ATC GCG GTG ACG GTC AGC GGC CTG GTC ACC GTG
G G K P M E G W I A V T V S G L V T V
SLDR SLDR RDR MRMR M FSR SLDR SF TDS DRR TLSF FMR TLS SDR SLDR LSF TLS FMMR TLSF

TCC CTG CTG AAG CCC AGC GGG CAG GTG CTG ACG TCC ACC GAG AGC CTG TGC CGG CTG
S L L K P S G Q V L T S T E S L C R L
SMR LSF LSF RDR MRMR SDR SLSL MFR TLSF LSF FMR SMR FMMR FSR SDR LSF T RSL LSF

CGC GGC CGC GTG GCC CTG GCC GAC ATC GCC TTC ACC GGC GGC GGC AAC ATC GTG GTG
R G R V A L A D I A F T G G G N I V V
RDR SLDR RDR TLSF DRMR LSF DRMR D TDS DRMR F FMMR SLDR SLDR SLDR RM TDS TLSF TLSF

GCC ACG GCG GAC GGC AGC AGC GCG TCG CCC GTG CAG TTC TAC AAG GTG TGC GTG AGC
A T A D G S S A S P V Q F Y K V C V S
DRMR FMR DRR D SLDR SDR SDR DRR SR MRMR TLSF MFR F LS RDR TLSF T TLSF SDR

GTG GTG AGC GAG AAG TGC CGT ATC GAC ACG GAG ATC CTG CCC TCC CTG TTC ATG CGC
V V S E K C R I D T E I L P S L F M R
TLSF TLSF SDR FSR RDR T RTL TDS D FMR FSR TDS LSF MRMR SMR LSF F M RDR

TGC ACC ACC GAC CTC AAC CGC AAG GAC AAG TTT CCC GCC ATC ACC CAC CTC AAG TTC
C T T D L N R K D K F P A I T H L K F
T FMMR FMMR D LS RM RDR RDR D RDR FL MRMR DRMR TDS FMMR LT LS RDR F

CTG GCC CGG GAC ATG TCG GAG CAG GTG CTT TTG TGC GCG TCC AGC CAG ACC AGC AGC
L A R D M S E Q V L L C A S S Q T S S
LSF DRMR RSL D M SR FSR MFR TLSF LF LSF T DRR SMR SDR MFR FMMR SDR SDR

ATC GTG GAG TGC TGG TCC CTG CGC AAG GAG GGA CTC CCC GTG AAC AAC ATC TTC CAG
I V E C W S L R K E G L P V N N I F Q
TDS TLSF FSR T SF SMR LSF RDR RDR FSR SL LS MRMR TLSF RM RM TDS F MFR

CAG ATC TCC CCC GTG GTT GGC GAC AAA CAG CCC ACA ATT CTC AAA TGG CGG ATC CTA
Q I S P V V G D K Q P T I L K W R I L
MFR TDS SMR MRMR TLSF TLF SLDR D RD MFR MRMR FM TDF LS RD SF RSL TDS L

TCG GCC ACC AAC GAT CTG GAC CGT GTG TCG GCC GTG GCG CTG CCC AAG CTG CCC ATC
S A T N D L D R V S A V A L P K L P I
SR DRMR FMMR RM DTD LSF D RTL TLSF SR DRMR TLSF DRR LSF MRMR RDR LSF MRMR TDS

TCG CTC ACC AAC ACC GAC CTC AAG GTG GCC AGC GAC ACA CAG TTC TAC CCT GGC CTC
S L T N T D L K V A S D T Q F Y P G L
SR LS FMMR RM FMMR D LS RDR TLSF DRMR SDR D FM MFR F LS MRL SLDR LS

GGG CTG GCC CTG GCC TTC CAC GAC GGC AGC GTC CAC ATC GTG CAC CGG CTC TCA CTG
G L A L A F H D G S V H I V H R L S L
SLSL LSF DRMR LSF DRMR F LT D SLDR SDR TLS LT TDS TLSF LT RSL LS S LSF

CAG ACC ATG GCC GTC TTC TAC AGC TCC GCG GCC CCG AGG CCT GTG GAT GAG CCG GCC
Q T M A V F Y S S A A P R P V D E P A
MFR FMMR M DRMR TLS F LS SDR SMR DRR DRMR MRR RSL MRL TLSF DTD FSR MRR DRMR

ATG AAG CGC CCC CGC ACC GCG GGC CCC GCC GTC CAC TTA AAG GCT ATG CAG CTA TCG
M K R P R T A G P A V H L K A M Q L S
M RDR RDR MRMR RDR FMMR DRR SLDR MRMR DRMR TLS LT LLS RDR DRL M MFR L SR

TGG ACG TCA CTG GCC CTG GTG GGG ATT GAC AGC CAC GGG AAG CTG AGC GTG CTC CGC
W T S L A L V G I D S H G K L S V L R
SF FMR S LSF DRMR LSF TLSF SLSL TDF D SDR LT SLSL RDR LSF SDR TLSF LS RDR

CTC TCA CCT TCC ATG GGC CAC CCG CTG GAG GTG GGG CTG GCG CTG CGG CAC CTG CTC
L S P S M G H P L E V G L A L R H L L
LS S MRL SMR M SLDR LT MRR LSF FSR TLSF SLSL LSF DRR LSF RSL LT LSF LS

TTC CTG CTG GAG TAC TGC ATG GTG ACC GGC TAC GAC TGG TGG GAC ATC CTG CTG CAC
F L L E Y C M V T G Y D W W D I L L H
F LSF LSF FSR LS T M TLSF FMMR SLDR LS D SF SF D TDS LSF LSF LT

GTG CAG CCC AGT ATG GTA CAG AGC CTG GTG GAG AAG CTG CAC GAG GAG TAC ACG CGC
V Q P S M V Q S L V E K L H E E Y T R
TLSF MFR MRMR STL M TL MFR SDR LSF TLSF FSR RDR LSF LT FSR FSR LS FMR RDR

CAG ACC GCT GCC CTG CAG CAG GTC CTC TCC ACC CGG ATC CTG GCC ATG AAG GCC TCG
Q T A A L Q Q V L S T R I L A M K A S
MFR FMMR DRL DRMR LSF MFR MFR TLS LS SMR FMMR RSL TDS LSF DRMR M RDR DRMR SR

CTC TGC AAG CTG TCG CCC TGC ACG GTG ACC CGC GTG TGC GAC TAC CAC ACC AAG CTC
L C K L S P C T V T R V C D Y H T K L
LS T RDR LSF SR MRMR T FMR TLSF FMMR RDR TLSF T D LS LT FMMR RDR LS

TTC CTC ATC GCC ATC AGC TCC ACC CTG AAG TCG CTG CTG CGC CCC CAC TTT CTC AAC
F L I A I S S T L K S L L R P H F L N
F LS TDS DRMR TDS SDR SMR FMMR_LSF RDR SR LSF LSF RDR MRMR LT FL LS RM

ACG CCT GAC AAG AGC CCC GGC GAC CGG CTG ACC GAG ATC TGC ACC AAG ATC ACC GAC
T P D K S P G D R L T E I C T K I T D
FMR MRL D RDR SDR MRMR SLDR D RSL LSF FMMR FSR TDS T FMMR RDDR TDS FMMR D

GTC GAC ATT GAC AAG GTC ATG ATC AAC CTC AAG ACG GAG GAA TTT GTG CTG GAC ATG
V D I D K V M I N L K T E E F V L D M
TLS D TDF D RDR TLS M TDS RM LS RDR FMR FSR FS FL TLSF LSF D M

AAC ACA CTG CAG GCG CTG CAG CAG CTC TTG CAG TGG GTG GGC GAC TTC GTG CTG TAC
N T L Q A L Q Q L L Q W V G D F V L Y
RM FM LSF MFR DRR LSF MFR MFR LS LSF MFR SF TLSF SLDR D F TLSF LSF LS

CTG CTG GCC AGC CTA CCC AAC CAG GGT TCC CTG CTG AGG CCG GGC CAC AGC TTT CTG
L L A S L P N Q G S L L R P G H S F L
LSF LSF DRMR SDR L MRMR RM MFR SLTL SMR LSF LSF RSL MRR SLDR LT SDR FL LSF

CGG GAC GGC ACC TCG CTG GGC ATG CTT CGG GAA TTG ATG GTG GTC ATC CGC ATC TGG
R D G T S L G M L R E L M V V I R I W
RSL D SLDR FMMR SR LSF SLDR M LF RSL FS LSF M TLSF TLS TDS RDR TDS SF

GGC CTT CTG AAG CCC AGC TGC CTG CCC GTG TAT ACG GCC ACC TCG GAT ACC CAG GAC
G L L K P S C L P V Y T A T S D T Q D
SLDR LF LSF RDR MRMR SDR T LSF MRMR TLSF LSTD FMR DRMR FMMR SR DTD FMMR MFR D

AGC ATG TCC CTG CTC TTC CGC CTG CTC ACC AAG CTC TGG ATC TGC TGT CGC GAT GAG
S M S L L F R L L T K L W I C C R D E
SDR M SMR LSF LS F RDR LSF LS FMMR RDR LS SR TDS T TTL RDR DTD FSR

GGC CCA GCG AGC GAG CCG GAC GAG GCG CTG GTG G AT GAA TGC TGC CTG CTG CCC AGC
G P A S E P D E A L V D E C C L L P S
SLDR MR DRR SDR FSR MRR D FSR DRR LSF TLSF DTD FS T T LSF LSF MRMR_SDR

CAG CTG CTT ATC CCC AGC CTG GAC TGG CTG CCA GCC AGC GAC GGC CTG GTT AGC CGC
Q L L I P S L D W L P A S D G L V S R
MFR LSF LF TDS MRMR SDR LSF D SF LSF MR DRMR SDR D SLDR LSF TLF SDR RDR

CTG CAG CCC AAG CAG CCC CTT CGT CTG CAG TTT GGC CGG GCG CCC ACG CTG CCT GGC
L Q P K Q P L R L Q F G R A P T L P G
LSF MFR MRMR RDR MFR MRMR LF RTL LSF MFR FL SLDR RSL DRR MRMR FMR LSF MRL SLDR

AGT GCT GCC ACC CTG CAG CTC GAC GGC CTC GCC AGG GCC CCA GGC CAG CCC AAG ATC
 S A A T L Q L D G L A R A P G Q P K I
 STL DRL DRMR FMRR LSF MFR LS D SLDR LS DRMR RSL DRMR MR SLDR MFR MRMR RDR TDS

GAC CAC CTG CGG AGG CTG CAC CTT GGC GCT TGC CCC ACG GAG GAA TGC AAG GCC TGC
 D H L R R L H L G A C P T E E C K A C
 D LT LSF RSL RSL LSF LT LF SLDR DRL T MRMR FMR FSR FS T RDR DRMR T

ACC AGG TGC GGC TGT GTC ACC ATG CTC AAG TCG CCC AAC AGA ACC ACG GCG GTG AAG
 T R C G C V T M L K S P N R T T A V K
 FMRR RSL T SLDR TTL TLS FMRR M LS RDR SR MRMR RM RFS FMRR FMR DRR TLSF RDR

CAG TGG GAG CAG CGC TGG ATC AAG AAC TGC CTG GCT GTT GAA GGC CGT GGG CCG GAC
 Q W E Q R W I K N C L A V E G R G P D
 MFR SF FSR MFR RDR SF TDS RDR RM T LSF DRL TLF FS SLDR RTL SLSL MRR D

GCC TGC GTG ACC AGC AGA GCT TCT GAG GAA GCC CCT GCC TTT GTC CAG CTG GGC CCG
 A C V T S R A S E E A P A F V Q L G P
 DRMR T TLSF FMRR SDR RFS DRL SL FSR FS DRMR MRL DRMR FL TLS MFR LSF SLDR MRR

CAG TCC ACA CAC CAC TCT CCC AGG ACC CCC AGA TCC CTG GAC CAT CTG CAT CCA GAG
 Q S T H H S P R T P R S L D H L H P E
 MFR SMR FM LT LT SL MRMR RSL FMRR MRMR RFS SMR LSF D LTM LSF LTM MR FSR

GAC CGT CCG TGA
 D R P
 D RTL MRR STOP

Homo sapiens mediator complex subunit 16 (THRAP5)

$\text{♩} = 150$

Violin

8

Vln.

16

Vln.

24

Vln.

32

Vln.

39

Vln.

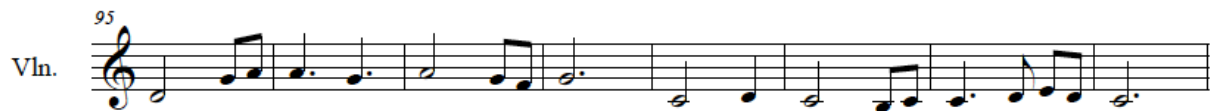
47

Vln.

55

Vln.

The image displays a musical score for a violin, consisting of eight staves. The first staff is labeled 'Violin' and includes a tempo marking of a quarter note equal to 150 beats per minute. The subsequent seven staves are each labeled 'Vln.' and begin with a measure number (8, 16, 24, 32, 39, 47, and 55 respectively). The music is written in treble clef with a 3/4 time signature. The notation includes various note values such as quarter, eighth, and sixteenth notes, as well as rests and ties. The key signature is one flat (B-flat), and the overall tempo is marked as 150 beats per minute.







268

Vln.

276

Vln.

284

Vln.

292

Vln.

300

Vln.

307

Vln.

315

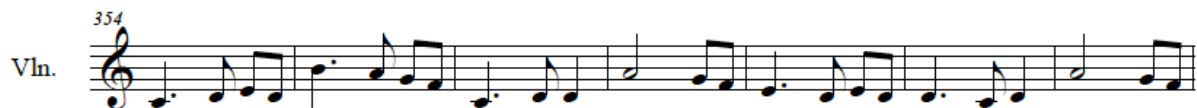
Vln.

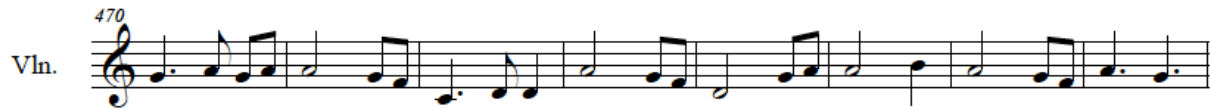
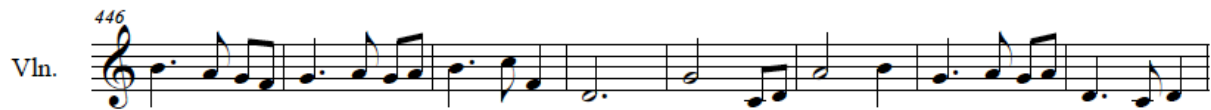
323

Vln.

330

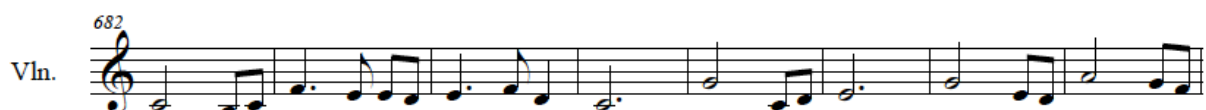
Vln.













758
Vln. 

765
Vln. 

773
Vln. 

780
Vln. 

788
Vln. 

796
Vln. 

804
Vln. 

812
Vln. 

819
Vln. 



>V00537 Homo sapiens Interferon-alpha1

$\text{♩} = 150$

Violin

8

Vln.

16

Vln.

24

Vln.

32

Vln.

40

Vln.

48

Vln.

56

Vln.

The musical score is for a violin part, labeled 'Violin' and 'Vln.'. It is written in treble clef with a key signature of one flat (Bb). The tempo is indicated as quarter note = 150. The score is divided into measures, with measure numbers 8, 16, 24, 32, 40, 48, and 56 marked at the beginning of their respective staves. The music consists of a single melodic line for the violin.





Fig. S2. Translation of AKR and selected interacting protein sequences into musical scores. The algorithm used for translation was previously reported (8), which also contains translation data for human IFN- α 1. Modifications for this algorithm are described in Materials and Methods.

Unison

©

16

Ob.

E♭ Cl.

Bsn.

Vln.

Vla.

Vc.

Musical imitation

Musical imitation

Musical imitation

Musical imitation

24

Ob.

E♭ Cl.

Bsn.

Vln.

Vla.

Vc.

Musical imitation

Musical imitation

Musical imitation

Musical imitation

Musical imitation

Musical imitation

Musical imitation

This image displays a musical score for measures 31 through 38, featuring six staves: Oboe (Ob.), E♭ Clarinet (E♭ Cl.), Bassoon (Bsn.), Violin (Vln.), Viola (Vla.), and Violoncello (Vc.). The score is written in treble and bass clefs with a key signature of two sharps (F# and C#). The notation includes various note values, rests, and dynamic markings. The text "Musical imitation" is written in red below the staves, indicating specific passages where the instruments imitate each other. These passages are highlighted with yellow and green oval shapes. The score is divided into two systems, with measures 31-37 on the first system and measures 38-44 on the second system. The measures are numbered 31, 38, and 44 at the beginning of their respective staves.

Ob. 31 Musical imitation Musical imitation Musical imitation Musical imitation

E♭ Cl. Musical imitation Musical imitation Musical imitation Musical imitation

Bsn. Musical imitation Musical imitation

Vln. 31 Musical imitation Musical imitation Musical imitation

Vla. Musical imitation Musical imitation

Vc. Musical imitation

Ob. 38 Musical imitation Musical imitation

E♭ Cl. Musical imitation Musical imitation Musical imitation

Bsn. Musical imitation

Vln. 38 Musical imitation

Vla.

Vc.

45

Ob.

E♭ Cl.

Bsn.

Musical imitation

Vln.

Musical imitation

Vla.

Musical imitation

Musical imitation

Vc.

Musical imitation

Musical imitation

Musical imitation

52

Ob.

Musical imitation

Musical imitation

E♭ Cl.

Musical imitation

Bsn.

Musical imitation

52

Vln.

Vla.

Musical imitation

Musical imitation

Vc.

Vc.

75

Ob. Musical imitation Musical imitation

E♭ Cl. Musical imitation Musical imitation

Bsn.

75

Vln. Musical imitation

Vla. Musical imitation

Vc. Musical imitation

83

Ob. Musical imitation

E♭ Cl.

Bsn.

83

Vln. Musical imitation

Vla. Musical imitation

Vc. Musical imitation

Musical imitation

This musical score page features two systems of staves. The first system includes Oboe (Ob.), E♭ Clarinet (E♭ Cl.), Bassoon (Bsn.), Violin (Vln.), Viola (Vla.), and Violoncello (Vc.). The second system includes Oboe (Ob.), E♭ Clarinet (E♭ Cl.), Bassoon (Bsn.), Violin (Vln.), Viola (Vla.), and Violoncello (Vc.). The score is marked with measure numbers 90 and 97. Various musical phrases are highlighted with green and yellow ovals. Red text labels "Musical imitation" are placed below the staves to indicate specific instances of this technique. The notation includes various note values, rests, and dynamic markings.

Ob. 90 Musical imitation Musical imitation

E♭ Cl. Musical imitation Musical imitation

Bsn.

Vln. Musical imitation

Vla. Musical imitation

Vc. Musical imitation

Ob. 97 Musical imitation

E♭ Cl. Musical imitation Musical imitation

Bsn. Musical imitation Musical imitation

Vln.

Vla.

Vc. Musical imitation

This musical score page contains three systems of staves, each with five parts: Oboe (Ob.), E-flat Clarinet (E♭ Cl.), Bassoon (Bsn.), Violin (Vln.), and Viola (Vla.). The first system covers measures 104 to 111, the second system covers measures 112 to 119, and the third system covers measures 120 to 127. The key signature is two sharps (F# and C#). The score is annotated with green and yellow highlights and the text "Musical imitation" in red, indicating specific musical motifs.

System 1 (Measures 104-111):

- Ob.:** Measures 104-111. Green highlights in measures 105, 106, 107, 108, 109, 110, and 111. Yellow highlights in measures 105, 106, 107, 108, 109, 110, and 111. "Musical imitation" is labeled in measure 108.
- E♭ Cl.:** Measures 104-111. Green highlights in measures 105, 106, 107, 108, 109, 110, and 111. Yellow highlights in measures 105, 106, 107, 108, 109, 110, and 111. "Musical imitation" is labeled in measure 108.
- Bsn.:** Measures 104-111. Green highlights in measures 105, 106, 107, 108, 109, 110, and 111. Yellow highlights in measures 105, 106, 107, 108, 109, 110, and 111. "Musical imitation" is labeled in measure 108.
- Vln.:** Measures 104-111. Green highlights in measures 105, 106, 107, 108, 109, 110, and 111. Yellow highlights in measures 105, 106, 107, 108, 109, 110, and 111. "Musical imitation" is labeled in measure 108.
- Vla.:** Measures 104-111. Green highlights in measures 105, 106, 107, 108, 109, 110, and 111. Yellow highlights in measures 105, 106, 107, 108, 109, 110, and 111. "Musical imitation" is labeled in measure 108.
- Vc.:** Measures 104-111. Green highlights in measures 105, 106, 107, 108, 109, 110, and 111. Yellow highlights in measures 105, 106, 107, 108, 109, 110, and 111. "Musical imitation" is labeled in measure 108.

System 2 (Measures 112-119):

- Ob.:** Measures 112-119. Green highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. Yellow highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. "Musical imitation" is labeled in measure 112.
- E♭ Cl.:** Measures 112-119. Green highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. Yellow highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. "Musical imitation" is labeled in measure 112.
- Bsn.:** Measures 112-119. Green highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. Yellow highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. "Musical imitation" is labeled in measure 112.
- Vln.:** Measures 112-119. Green highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. Yellow highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. "Musical imitation" is labeled in measure 112.
- Vla.:** Measures 112-119. Green highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. Yellow highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. "Musical imitation" is labeled in measure 112.
- Vc.:** Measures 112-119. Green highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. Yellow highlights in measures 112, 113, 114, 115, 116, 117, 118, and 119. "Musical imitation" is labeled in measure 112.

System 3 (Measures 120-127):

- Ob.:** Measures 120-127. Green highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. Yellow highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. "Musical imitation" is labeled in measure 120.
- E♭ Cl.:** Measures 120-127. Green highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. Yellow highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. "Musical imitation" is labeled in measure 120.
- Bsn.:** Measures 120-127. Green highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. Yellow highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. "Musical imitation" is labeled in measure 120.
- Vln.:** Measures 120-127. Green highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. Yellow highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. "Musical imitation" is labeled in measure 120.
- Vla.:** Measures 120-127. Green highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. Yellow highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. "Musical imitation" is labeled in measure 120.
- Vc.:** Measures 120-127. Green highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. Yellow highlights in measures 120, 121, 122, 123, 124, 125, 126, and 127. "Musical imitation" is labeled in measure 120.

This musical score page contains two systems of staves, each with five parts: Oboe (Ob.), E♭ Clarinet (E♭ Cl.), Bassoon (Bsn.), Violin (Vln.), and Viola (Vla.). The first system covers measures 119 to 126, and the second system covers measures 127 to 134. The key signature is one sharp (F#), and the time signature is 4/4. Red text labels "Musical imitation" are placed below the staves to indicate specific passages where one instrument imitates another. These imitations are highlighted with yellow and green shapes.

System 1 (Measures 119-126):

- Measure 119:** Oboe and Bassoon have yellow highlights.
- Measure 120:** Bassoon has a yellow highlight.
- Measure 121:** Bassoon has a yellow highlight.
- Measure 122:** Bassoon has a yellow highlight.
- Measure 123:** Bassoon has a yellow highlight.
- Measure 124:** Bassoon has a yellow highlight.
- Measure 125:** Bassoon has a yellow highlight.
- Measure 126:** Bassoon has a yellow highlight.

System 2 (Measures 127-134):

- Measure 127:** Oboe and Bassoon have yellow highlights.
- Measure 128:** Oboe and Bassoon have yellow highlights.
- Measure 129:** Oboe and Bassoon have yellow highlights.
- Measure 130:** Oboe and Bassoon have yellow highlights.
- Measure 131:** Oboe and Bassoon have yellow highlights.
- Measure 132:** Oboe and Bassoon have yellow highlights.
- Measure 133:** Oboe and Bassoon have yellow highlights.
- Measure 134:** Oboe and Bassoon have yellow highlights.

This musical score page contains three systems of staves, each with a rehearsal mark (135, 143, 143) at the beginning. The instruments are arranged in three parts per system: Ob. (Oboe), E♭ Cl. (E-flat Clarinet), and Bsn. (Bassoon) in the first system; Vln. (Violin), Vla. (Viola), and Vc. (Violoncello) in the second system; and Ob. (Oboe), E♭ Cl. (E-flat Clarinet), and Bsn. (Bassoon) in the third system. The staves are marked with various musical notations, including notes, rests, and accidentals. Colored ovals (yellow, green, and orange) are placed over specific musical phrases to indicate 'Musical imitation'. The text 'Musical imitation' is written in red below the staves, pointing to these highlighted phrases. The score is written in a key signature of two sharps (F# and C#) and a common time signature (C).

135

Ob.

E♭ Cl.

Bsn.

Musical imitation

Musical imitation

Musical imitation

Musical imitation

135

Vln.

Vla.

Vc.

Musical imitation

Musical imitation

Musical imitation

143

Ob.

E♭ Cl.

Bsn.

Musical imitation

Musical imitation

Musical imitation

Musical imitation

143

Vln.

Vla.

Vc.

Musical imitation

[illegible]

198

Ob.

E♭ Cl.

Bsn.

198

Vln.

Vla.

Vc.

206

Ob.

E♭ Cl.

Bsn.

206

Vln.

Vla.

Vc.

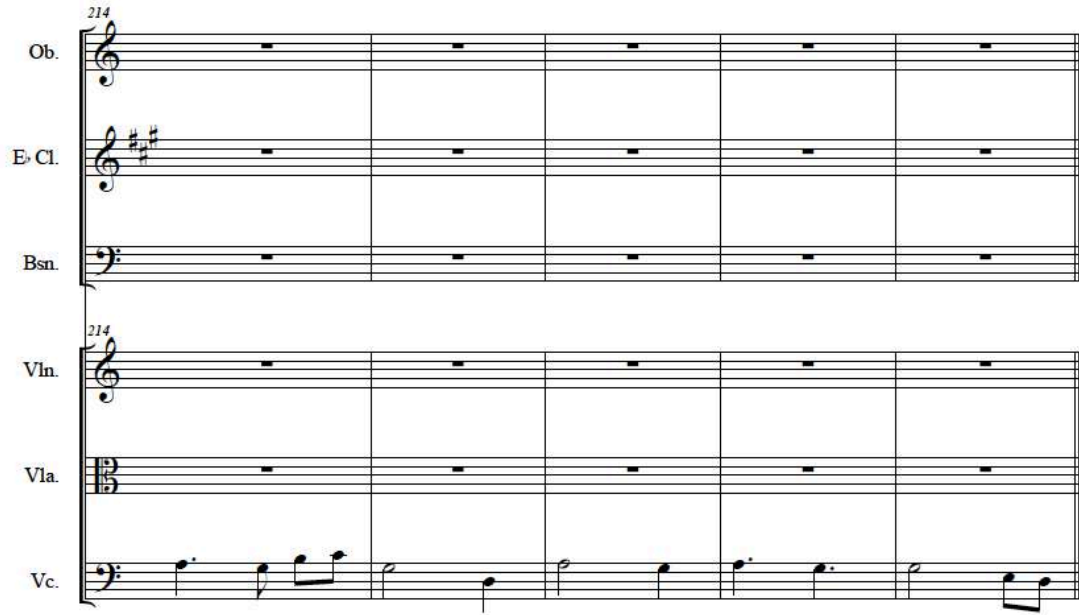


Fig. S3. Multi species AKR musical ensemble. Musical scores for *C. elegans* AKR, *D. melanogaster* AKR, *I. scapularis* AKR (SUB), *X. laevis* AKR2, *S. alpinus* AKR2 and *H. sapiens* AKR2 (Supplementary information, Fig. S1) were ensemble and analyzed for musical patterns.

Unison

Third / Sixth interval

Fourth / Fifth interval

AKR2-RNF10

$\text{♩} = 150$

Akırın 2
Violin I

RNF10
Violin II

8

Vln. I

Vln. II

15

Vln. I

Vln. II

23

Vln. I

Vln. II

The musical score for AKR2-RNF10 is presented in four systems. Each system consists of two staves: Violin I (top) and Violin II (bottom). The tempo is indicated as $\text{♩} = 150$. The Violin I part is mostly rests, while the Violin II part plays a continuous eighth-note melody. The key signature has one sharp (F#) and the time signature is 3/4. The systems are labeled with measure numbers 8, 15, and 23 at the beginning of the Violin II staff.

31

Vln. I

Vln. II

Measures 31-37: Violin I has whole rests. Violin II plays a rhythmic pattern of eighth and sixteenth notes, starting on G4 and moving in a descending sequence.

38

Vln. I

Vln. II

Measures 38-44: Violin I has whole rests. Violin II continues the rhythmic pattern of eighth and sixteenth notes, maintaining the descending sequence.

45

Vln. I

Vln. II

Measures 45-51: Violin I has whole rests. Violin II continues the rhythmic pattern of eighth and sixteenth notes, maintaining the descending sequence.

52

Vln. I

Vln. II

Measures 52-59: Violin I has whole rests. Violin II continues the rhythmic pattern of eighth and sixteenth notes, maintaining the descending sequence.

60

Vln. I

Vln. II

Measures 60-66: Violin I has whole rests. Violin II continues the rhythmic pattern of eighth and sixteenth notes, maintaining the descending sequence.

67

Vln. I

Vln. II



75

Vln. I

Vln. II



83

Vln. I

Vln. II



91

Vln. I

Vln. II



99

Vln. I

Vln. II



106

Vln. I

Vln. II

Measures 106-113: Violin I has whole rests. Violin II plays a rhythmic pattern of eighth and sixteenth notes, starting on G4 and moving generally upwards.

114

Vln. I

Vln. II

Measures 114-121: Violin I has whole rests. Violin II continues the rhythmic pattern, with some notes beamed together in pairs.

122

Vln. I

Vln. II

Measures 122-129: Violin I has whole rests. Violin II continues the rhythmic pattern, maintaining the eighth and sixteenth note figures.

130

Vln. I

Vln. II

Measures 130-136: Violin I has whole rests. Violin II continues the rhythmic pattern, with some notes beamed together in pairs.

137

Vln. I

Vln. II

Measures 137-144: Violin I has whole rests. Violin II continues the rhythmic pattern, with some notes beamed together in pairs.

145

Vln. I

Vln. II

153

Vln. I

Vln. II

161

Vln. I

Vln. II

169

Vln. I

Vln. II

177

Vln. I

Vln. II

185

Vln. I

Vln. II



$\text{♩} = 150$

193

Vln. I


Vln. II



201

Vln. I

Vln. II



208

Vln. I

Vln. II



215

Vln. I

Vln. II



222

Vln. I

Vln. II

Violin I and II staves. Measure 222 starts with a treble clef and a key signature of one sharp (F#). The music consists of eighth and sixteenth notes. Measures 222-229 are shown. Notes in measures 222, 223, 224, 225, and 226 are highlighted with yellow and orange ovals. A group of notes in measure 229 is highlighted with a green oval.

230

Vln. I

Vln. II

Violin I and II staves. Measure 230 starts with a treble clef and a key signature of one sharp (F#). The music consists of eighth and sixteenth notes. Measures 230-236 are shown. Notes in measures 230, 231, 232, 233, 234, 235, and 236 are highlighted with yellow and orange ovals. A group of notes in measure 230 is highlighted with a green oval.

237

Vln. I

Vln. II

Violin I and II staves. Measure 237 starts with a treble clef and a key signature of one sharp (F#). The music consists of eighth and sixteenth notes. Measures 237-243 are shown. Notes in measures 237, 238, 239, 240, 241, 242, and 243 are highlighted with yellow and orange ovals. A group of notes in measure 237 is highlighted with a green oval.

244

Vln. I

Vln. II

Violin I and II staves. Measure 244 starts with a treble clef and a key signature of one sharp (F#). The music consists of eighth and sixteenth notes. Measures 244-250 are shown. Notes in measures 244, 245, 246, 247, 248, 249, and 250 are highlighted with yellow and orange ovals. A group of notes in measure 244 is highlighted with a green oval.

251

Vln. I

Vln. II

Violin I and II staves. Measure 251 starts with a treble clef and a key signature of one sharp (F#). The music consists of eighth and sixteenth notes. Measures 251-257 are shown. Notes in measures 251, 252, 253, 254, 255, 256, and 257 are highlighted with yellow and orange ovals. A group of notes in measure 251 is highlighted with a green oval.

258

Vln. I

Vln. II

Measures 258-264. Violin I and II parts. Measures 258-260 feature a rhythmic pattern of eighth and sixteenth notes. Measures 261-264 show a more melodic line with some notes highlighted in yellow and orange.

265

Vln. I

Vln. II

Measures 265-271. Violin I and II parts. Measures 265-267 feature a rhythmic pattern of eighth and sixteenth notes. Measures 268-271 show a more melodic line with some notes highlighted in yellow and orange.

272

Vln. I

Vln. II

Measures 272-278. Violin I and II parts. Measures 272-274 feature a rhythmic pattern of eighth and sixteenth notes. Measures 275-278 show a more melodic line with some notes highlighted in yellow and orange.

279

Vln. I

Vln. II

Measures 279-285. Violin I and II parts. Measures 279-281 feature a rhythmic pattern of eighth and sixteenth notes. Measures 282-285 show a more melodic line with some notes highlighted in yellow and orange.

286

Vln. I

Vln. II

Measures 286-292. Violin I and II parts. Measures 286-288 feature a rhythmic pattern of eighth and sixteenth notes. Measures 289-292 show a more melodic line with some notes highlighted in yellow and orange.

293

Vln. I

Vln. II

300

Vln. I

Vln. II

307

Vln. I

Vln. II

314

Vln. I

Vln. II

321

Vln. I

Vln. II

328

Vln. I

Vln. II

335

Vln. I

Vln. II

342

Vln. I

Vln. II

349

Vln. I

Vln. II

356

Vln. I

Vln. II

363

Vln. I

Vln. II

Violin I and Violin II staves, measures 363-369. The score shows two staves. Measure 363 has a green oval on the Vln. I staff. Measure 364 has green ovals on both staves. Measure 365 has a green oval on the Vln. I staff. Measure 366 has a green oval on the Vln. II staff. Measure 367 has a green oval on the Vln. I staff. Measure 368 has a green oval on the Vln. II staff. Measure 369 has a green oval on the Vln. I staff.

370

Vln. I

Vln. II

Violin I and Violin II staves, measures 370-376. The score shows two staves. Measure 370 has a yellow oval on the Vln. I staff. Measure 371 has a yellow oval on the Vln. II staff. Measure 372 has a yellow oval on the Vln. I staff. Measure 373 has a yellow oval on the Vln. II staff. Measure 374 has a yellow oval on the Vln. I staff. Measure 375 has a yellow oval on the Vln. II staff. Measure 376 has a yellow oval on the Vln. I staff.

377

Vln. I

Vln. II

Violin I and Violin II staves, measures 377-383. The score shows two staves. Measure 377 has a yellow oval on the Vln. I staff. Measure 378 has a yellow oval on the Vln. II staff. Measure 379 has a yellow oval on the Vln. I staff. Measure 380 has a yellow oval on the Vln. II staff. Measure 381 has a yellow oval on the Vln. I staff. Measure 382 has a yellow oval on the Vln. II staff. Measure 383 has a yellow oval on the Vln. I staff.

384

Vln. I

Vln. II

Violin I and Violin II staves, measures 384-390. The score shows two staves. Measure 384 has a green oval on the Vln. I staff. Measure 385 has a yellow oval on the Vln. II staff. Measure 386 has a yellow oval on the Vln. I staff. Measure 387 has a yellow oval on the Vln. II staff. Measure 388 has a yellow oval on the Vln. I staff. Measure 389 has a yellow oval on the Vln. II staff. Measure 390 has a yellow oval on the Vln. I staff.

391

Vln. I

Vln. II

Violin I and Violin II staves, measures 391-397. The score shows two staves. Measure 391 has a yellow oval on the Vln. I staff. Measure 392 has a yellow oval on the Vln. II staff. Measure 393 has a yellow oval on the Vln. I staff. Measure 394 has a yellow oval on the Vln. II staff. Measure 395 has a yellow oval on the Vln. I staff. Measure 396 has a yellow oval on the Vln. II staff. Measure 397 has a yellow oval on the Vln. I staff.

398

Vln. I

Vln. II

Measures 398-405. Vln. I and Vln. II. Vln. I has a melodic line with notes highlighted in green, yellow, and orange. Vln. II has a similar melodic line with notes highlighted in green, yellow, and orange.

406

Vln. I

Vln. II

Measures 406-412. Vln. I and Vln. II. Vln. I has a melodic line with notes highlighted in green, yellow, and orange. Vln. II has a similar melodic line with notes highlighted in green, yellow, and orange.

413

Vln. I

Vln. II

Measures 413-419. Vln. I and Vln. II. Vln. I has a melodic line with notes highlighted in green, yellow, and orange. Vln. II has a similar melodic line with notes highlighted in green, yellow, and orange.

420

Vln. I

Vln. II

Measures 420-427. Vln. I and Vln. II. Vln. I has a melodic line with notes highlighted in green, yellow, and orange. Vln. II has a similar melodic line with notes highlighted in green, yellow, and orange.

428

Vln. I

Vln. II

Measures 428-435. Vln. I and Vln. II. Vln. I has a melodic line with notes highlighted in green, yellow, and orange. Vln. II has a similar melodic line with notes highlighted in green, yellow, and orange.

436

Vln. I

Vln. II



444

Vln. I

Vln. II



452

Vln. I

Vln. II



460

Vln. I

Vln. II



467

Vln. I

Vln. II



475

Vln. I

Vln. II



483

Vln. I

Vln. II



491

Vln. I

Vln. II



499

Vln. I

Vln. II



507

Vln. I

Vln. II



515

Vln. I

Vln. II

Measures 515-522. Violin I has whole rests. Violin II plays a descending eighth-note scale: G4, F4, E4, D4, C4, B3, A3, G3.

523

Vln. I

Vln. II

Measures 523-530. Violin I has whole rests. Violin II continues the descending eighth-note scale: F3, E3, D3, C3, B2, A2, G2, F2.

531

Vln. I

Vln. II

Measures 531-537. Violin I has whole rests. Violin II continues the descending eighth-note scale: E2, D2, C2, B1, A1, G1, F1, E1.

538

Vln. I

Vln. II

Measures 538-544. Violin I has whole rests. Violin II continues the descending eighth-note scale: D1, C1, B0, A0, G0, F0, E0, D0.

545

Vln. I

Vln. II

Measures 545-551. Violin I has whole rests. Violin II continues the descending eighth-note scale: C0, B-1, A-2, G-3, F-4, E-5, D-6, C-7.

552

Vln. I

Vln. II

Measures 552-559. Violin I: whole rests. Violin II: eighth notes, quarter notes, and sixteenth notes.

560

Vln. I

Vln. II

Measures 560-567. Violin I: whole rests. Violin II: eighth notes, quarter notes, and sixteenth notes.

568

Vln. I

Vln. II

Measures 568-575. Violin I: whole rests. Violin II: eighth notes, quarter notes, and sixteenth notes.

576

Vln. I

Vln. II

Measures 576-583. Violin I: whole rests. Violin II: eighth notes, quarter notes, and sixteenth notes.

584

Vln. I

Vln. II

Measures 584-591. Violin I: whole rests. Violin II: eighth notes, quarter notes, and sixteenth notes.

592

Vln. I

Vln. II

600

Vln. I

Vln. II

608

Vln. I

Vln. II

616

Vln. I

Vln. II

624

Vln. I

Vln. II

632

Vln. I

Vln. II

640

Vln. I

Vln. II

648

Vln. I

Vln. II

656

Vln. I

Vln. II

663

Vln. I

Vln. II

Violin I and Violin II staves. Violin I has a sustained high note (G5) with a fermata. Violin II plays a melodic line starting on E4, moving up stepwise with some grace notes and slurs.

Violin I and Violin II staves. Violin I has a sustained high note (G5) throughout. Violin II plays a melodic line starting on E4, moving through various intervals and rests.

Violin I and Violin II staves. Violin I has a sustained high note (G5) with a tremolo. Violin II plays a melodic line starting on G4, moving up stepwise with some grace notes and slurs.

Violin I part (Vln. I) shows a series of whole rests across measures 693 to 700. The Violin II part (Vln. II) contains a melodic line with eighth and sixteenth notes, including some beamed pairs, across the same measures.

Violin I and Violin II staves. Violin I has a treble clef and a key signature of one sharp (F#). Violin II has a treble clef and a key signature of one sharp (F#). The score shows measures 701 through 708. Violin I plays a sustained high note (G5) with a tremolo. Violin II plays a melodic line starting on G4, moving up stepwise to A5, then down to G4, and finally to E4.

709

Vln. I

Vln. II

717

Vln. I

Vln. II

725

Vln. I

Vln. II

732

Vln. I

Vln. II

740

Vln. I

Vln. II

748

Vln. I

Vln. II

756

Violin I (Vln. I) and Violin II (Vln. II) staves. The Violin I staff contains rests for all seven measures. The Violin II staff contains a melodic line: measure 756 (half note G4), measure 757 (quarter note A4, quarter note G4), measure 758 (quarter note F#4, quarter note E4), measure 759 (quarter note D4, quarter note C4), measure 760 (half note B3), measure 761 (half note A3), and measure 762 (half note G3).

763

Vln. I

Vln. II

771

Vln. I

Vln. II

The image shows a musical score for two violins. The Violin I part consists of whole rests in every measure. The Violin II part has a melodic line starting on a half note G4, followed by eighth and quarter notes, and ending with a half note G4. The notes are: G4 (half), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F#4 (quarter), E4 (half), D4 (half), C4 (half), B3 (half), A3 (half), G3 (half), F#3 (half), E3 (half), D3 (half), C3 (half), B2 (half), A2 (half), G2 (half), F#2 (half), E2 (half), D2 (half), C2 (half), B1 (half), A1 (half), G1 (half), F#1 (half), E1 (half), D1 (half), C1 (half), B0 (half), A0 (half), G0 (half), F#0 (half), E0 (half), D0 (half), C0 (half), B-1 (half), A-1 (half), G-1 (half), F#-1 (half), E-1 (half), D-1 (half), C-1 (half), B-2 (half), A-2 (half), G-2 (half), F#-2 (half), E-2 (half), D-2 (half), C-2 (half), B-3 (half), A-3 (half), G-3 (half), F#-3 (half), E-3 (half), D-3 (half), C-3 (half), B-4 (half), A-4 (half), G-4 (half), F#-4 (half), E-4 (half), D-4 (half), C-4 (half), B-5 (half), A-5 (half), G-5 (half), F#-5 (half), E-5 (half), D-5 (half), C-5 (half), B-6 (half), A-6 (half), G-6 (half), F#-6 (half), E-6 (half), D-6 (half), C-6 (half), B-7 (half), A-7 (half), G-7 (half), F#-7 (half), E-7 (half), D-7 (half), C-7 (half), B-8 (half), A-8 (half), G-8 (half), F#-8 (half), E-8 (half), D-8 (half), C-8 (half), B-9 (half), A-9 (half), G-9 (half), F#-9 (half), E-9 (half), D-9 (half), C-9 (half), B-10 (half), A-10 (half), G-10 (half), F#-10 (half), E-10 (half), D-10 (half), C-10 (half), B-11 (half), A-11 (half), G-11 (half), F#-11 (half), E-11 (half), D-11 (half), C-11 (half), B-12 (half), A-12 (half), G-12 (half), F#-12 (half), E-12 (half), D-12 (half), C-12 (half), B-13 (half), A-13 (half), G-13 (half), F#-13 (half), E-13 (half), D-13 (half), C-13 (half), B-14 (half), A-14 (half), G-14 (half), F#-14 (half), E-14 (half), D-14 (half), C-14 (half), B-15 (half), A-15 (half), G-15 (half), F#-15 (half), E-15 (half), D-15 (half), C-15 (half), B-16 (half), A-16 (half), G-16 (half), F#-16 (half), E-16 (half), D-16 (half), C-16 (half), B-17 (half), A-17 (half), G-17 (half), F#-17 (half), E-17 (half), D-17 (half), C-17 (half), B-18 (half), A-18 (half), G-18 (half), F#-18 (half), E-18 (half), D-18 (half), C-18 (half), B-19 (half), A-19 (half), G-19 (half), F#-19 (half), E-19 (half), D-19 (half), C-19 (half), B-20 (half), A-20 (half), G-20 (half), F#-20 (half), E-20 (half), D-20 (half), C-20 (half), B-21 (half), A-21 (half), G-21 (half), F#-21 (half), E-21 (half), D-21 (half), C-21 (half), B-22 (half), A-22 (half), G-22 (half), F#-22 (half), E-22 (half), D-22 (half), C-22 (half), B-23 (half), A-23 (half), G-23 (half), F#-23 (half), E-23 (half), D-23 (half), C-23 (half), B-24 (half), A-24 (half), G-24 (half), F#-24 (half), E-24 (half), D-24 (half), C-24 (half), B-25 (half), A-25 (half), G-25 (half), F#-25 (half), E-25 (half), D-25 (half), C-25 (half), B-26 (half), A-26 (half), G-26 (half), F#-26 (half), E-26 (half), D-26 (half), C-26 (half), B-27 (half), A-27 (half), G-27 (half), F#-27 (half), E-27 (half), D-27 (half), C-27 (half), B-28 (half), A-28 (half), G-28 (half), F#-28 (half), E-28 (half), D-28 (half), C-28 (half), B-29 (half), A-29 (half), G-29 (half), F#-29 (half), E-29 (half), D-29 (half), C-29 (half), B-30 (half), A-30 (half), G-30 (half), F#-30 (half), E-30 (half), D-30 (half), C-30 (half), B-31 (half), A-31 (half), G-31 (half), F#-31 (half), E-31 (half), D-31 (half), C-31 (half), B-32 (half), A-32 (half), G-32 (half), F#-32 (half), E-32 (half), D-32 (half), C-32 (half), B-33 (half), A-33 (half), G-33 (half), F#-33 (half), E-33 (half), D-33 (half), C-33 (half), B-34 (half), A-34 (half), G-34 (half), F#-34 (half), E-34 (half), D-34 (half), C-34 (half), B-35 (half), A-35 (half), G-35 (half), F#-35 (half), E-35 (half), D-35 (half), C-35 (half), B-36 (half), A-36 (half), G-36 (half), F#-36 (half), E-36 (half), D-36 (half), C-36 (half), B-37 (half), A-37 (half), G-37 (half), F#-37 (half), E-37 (half), D-37 (half), C-37 (half), B-38 (half), A-38 (half), G-38 (half), F#-38 (half), E-38 (half), D-38 (half), C-38 (half), B-39 (half), A-39 (half), G-39 (half), F#-39 (half), E-39 (half), D-39 (half), C-39 (half), B-40 (half), A-40 (half), G-40 (half), F#-40 (half), E-40 (half), D-40 (half), C-40 (half), B-41 (half), A-41 (half), G-41 (half), F#-41 (half), E-41 (half), D-41 (half), C-41 (half), B-42 (half), A-42 (half), G-42 (half), F#-42 (half), E-42 (half), D-42 (half), C-42 (half), B-43 (half), A-43 (half), G-43 (half), F#-43 (half), E-43 (half), D-43 (half), C-43 (half), B-44 (half), A-44 (half), G-44 (half), F#-44 (half), E-44 (half), D-44 (half), C-44 (half), B-45 (half), A-45 (half), G-45 (half), F#-45 (half), E-45 (half), D-45 (half), C-45 (half), B-46 (half), A-46 (half), G-46 (half), F#-46 (half), E-46 (half), D-46 (half), C-46 (half), B-47 (half), A-47 (half), G-47 (half), F#-47 (half), E-47 (half), D-47 (half), C-47 (half), B-48 (half), A-48 (half), G-48 (half), F#-48 (half), E-48 (half), D-48 (half), C-48 (half), B-49 (half), A-49 (half), G-49 (half), F#-49 (half), E-49 (half), D-49 (half), C-49 (half), B-50 (half), A-50 (half), G-50 (half), F#-50 (half), E-50 (half), D-50 (half), C-50 (half), B-51 (half), A-51 (half), G-51 (half), F#-51 (half), E-51 (half), D-51 (half), C-51 (half), B-52 (half), A-52 (half), G-52 (half), F#-52 (half), E-52 (half), D-52 (half), C-52 (half), B-53 (half), A-53 (half), G-53 (half), F#-53 (half), E-53 (half), D-53 (half), C-53 (half), B-54 (half), A-54 (half), G-54 (half), F#-54 (half), E-54 (half), D-54 (half), C-54 (half), B-55 (half), A-55 (half), G-55 (half), F#-55 (half), E-55 (half), D-55 (half), C-55 (half), B-56 (half), A-56 (half), G-56 (half), F#-56 (half), E-56 (half), D-56 (half), C-56 (half), B-57 (half), A-57 (half), G-57 (half), F#-57 (half), E-57 (half), D-57 (half), C-57 (half), B-58 (half), A-58 (half), G-58 (half), F#-58 (half), E-58 (half), D-58 (half), C-58 (half), B-59 (half), A-59 (half), G-59 (half), F#-59 (half), E-59 (half), D-59 (half), C-59 (half), B-60 (half), A-60 (half), G-60 (half), F#-60 (half), E-60 (half), D-60 (half), C-60 (half), B-61 (half), A-61 (half), G-61 (half), F#-61 (half), E-61 (half), D-61 (half), C-61 (half), B-62 (half), A-62 (half), G-62 (half), F#-62 (half), E-62 (half), D-62 (half), C-62 (half), B-63 (half), A-63 (half), G-63 (half), F#-63 (half), E-63 (half), D-63 (half), C-63 (half), B-64 (half), A-64 (half), G-64 (half), F#-64 (half), E-64 (half), D-64 (half), C-64 (half), B-65 (half), A-65 (half), G-65 (half), F#-65 (half), E-65 (half), D-65 (half), C-65 (half), B-66 (half), A-66 (half), G-66 (half), F#-66 (half), E-66 (half), D-66 (half), C-66 (half), B-67 (half), A-67 (half), G-67 (half), F#-67 (half), E-67 (half), D-67 (half), C-67 (half), B-68 (half), A-68 (half), G-68 (half), F#-68 (half), E-68 (half), D-68 (half), C-68 (half), B-69 (half), A-69 (half), G-69 (half), F#-69 (half), E-69 (half), D-69 (half), C-69 (half), B-70 (half), A-70 (half), G-70 (half), F#-70 (half), E-70 (half), D-70 (half), C-70 (half), B-71 (half), A-71 (half), G-71 (half), F#-71 (half), E-71 (half), D-71 (half), C-71 (half), B-72 (half), A-72 (half), G-72 (half), F#-72 (half), E-72 (half), D-72 (half), C-72 (half), B-73 (half), A-73 (half), G-73 (half), F#-73 (half), E-73 (half), D-73 (half), C-73 (half), B-74 (half), A-74 (half), G-74 (half), F#-74 (half), E-74 (half), D-74 (half), C-74 (half), B-75 (half), A-75 (half), G-75 (half), F#-75 (half), E-75 (half), D-75 (half), C-75 (half), B-76 (half), A-76 (half), G-76 (half), F#-76 (half), E-76 (half), D-76 (half), C-76 (half), B-77 (half), A-77 (half), G-77 (half), F#-77 (half), E-77 (half), D-77

779

Vln. I

Vln. II

787

Vln. I

Vln. II

Violin I: Measures 787-794, all whole rests.

Violin II: Measures 787-794, melodic line with eighth and quarter notes.

795

Vln. I

Vln. II

Violin I: Measures 795-802, all whole rests.

Violin II: Measures 795-802, continues melodic line.

803

Vln. I

Vln. II

Violin I: Measures 803-810, all whole rests.

Violin II: Measures 803-810, continues melodic line.

811

Vln. I

Vln. II

Violin I: Measure 811, whole rest; measures 812-818, silent.

Violin II: Measures 811-818, continues melodic line.

Unison

Third / Sixth interval

Fourth / Fifth interval

AKR2-THRAP5

$\text{♩} = 150$

The musical score is written for two violins, labeled *Akirin 2* (Violin I) and *MED16* (Violin II). The time signature is 3/4. The tempo is marked as $\text{♩} = 150$. The score is divided into four systems, each containing measures 1-7, 8-14, 15-21, and 22-28. In each system, Violin I (Akirin 2) plays whole rests, while Violin II (MED16) plays a continuous eighth-note melody. The melody consists of eighth notes and quarter notes, with some measures containing beamed eighth notes. The key signature is one flat (B-flat).

Akirin 2
Violin I

MED16
Violin II

Vln. I

Vln. II

Vln. I

Vln. II

Vln. I

Vln. II

32

Vln. I

Vln. II

39

Vln. I

Vln. II

47

Vln. I

Vln. II

$\text{♩} = 150$

55

Vln. I

Vln. II

62

Vln. I

Vln. II

69

Vln. I

Vln. II

76

Vln. I

Vln. II

83

Vln. I

Vln. II

90

Vln. I

Vln. II

97

Vln. I

Vln. II

The image displays a musical score for Violins I and II, spanning measures 69 to 97. The score is organized into five systems, each with two staves. The notes are color-coded: green for measures 69-75, 83-89, and 97-103; yellow for measures 76-82, 90-96, and 104-110; and orange for measures 83-89, 90-96, and 104-110. The notation includes various note values such as quarter, eighth, and sixteenth notes, as well as rests.

104

Vln. I

Vln. II

111

Vln. I

Vln. II

118

Vln. I

Vln. II

125

Vln. I

Vln. II

132

Vln. I

Vln. II

139

Vln. I

Vln. II

146

Vln. I

Vln. II

153

Vln. I

Vln. II

160

Vln. I

Vln. II

167

Vln. I

Vln. II

174

Vln. I

Vln. II

181

Vln. I

Vln. II

188

Vln. I

Vln. II

195

Vln. I

Vln. II

$\text{♩} = 150$

202

Vln. I

Vln. II

209

Vln. I

Vln. II

216

Vln. I

Vln. II

223

Vln. I

Vln. II

230

Vln. I

Vln. II

237

Vln. I

Vln. II

244

Vln. I

Vln. II

Violin I and II staves. Measure 244: Vln. I has a half note G4 (green), Vln. II has a half note G3 (green). Measure 245: Vln. I has a quarter note A4 (green), Vln. II has a quarter note A3 (green). Measure 246: Vln. I has a quarter note B4 (green), Vln. II has a quarter note B3 (green). Measure 247: Vln. I has a quarter note C5 (yellow), Vln. II has a quarter note C4 (yellow).

251

Vln. I

Vln. II

Violin I and II staves. Measure 251: Vln. I has a half note G4 (green), Vln. II has a half note G3 (green). Measure 252: Vln. I has a quarter note A4 (green), Vln. II has a quarter note A3 (green). Measure 253: Vln. I has a quarter note B4 (yellow), Vln. II has a quarter note B3 (yellow). Measure 254: Vln. I has a quarter note C5 (yellow), Vln. II has a quarter note C4 (yellow).

258

Vln. I

Vln. II

Violin I and II staves. Measure 258: Vln. I has a whole rest, Vln. II has a half note G3. Measure 259: Vln. I has a whole rest, Vln. II has a half note A3. Measure 260: Vln. I has a whole rest, Vln. II has a half note B3. Measure 261: Vln. I has a whole rest, Vln. II has a half note C4. Measure 262: Vln. I has a whole rest, Vln. II has a half note D4. Measure 263: Vln. I has a whole rest, Vln. II has a half note E4. Measure 264: Vln. I has a whole rest, Vln. II has a half note F4.

265

Vln. I

Vln. II

Violin I and II staves. Measure 265: Vln. I has a whole rest, Vln. II has a half note G3. Measure 266: Vln. I has a whole rest, Vln. II has a half note A3. Measure 267: Vln. I has a whole rest, Vln. II has a half note B3. Measure 268: Vln. I has a whole rest, Vln. II has a half note C4. Measure 269: Vln. I has a whole rest, Vln. II has a half note D4. Measure 270: Vln. I has a whole rest, Vln. II has a half note E4. Measure 271: Vln. I has a whole rest, Vln. II has a half note F4.

272

Vln. I

Vln. II

Violin I and II staves. Measure 272: Vln. I has a whole rest, Vln. II has a half note G3. Measure 273: Vln. I has a whole rest, Vln. II has a half note A3. Measure 274: Vln. I has a whole rest, Vln. II has a half note B3. Measure 275: Vln. I has a whole rest, Vln. II has a half note C4. Measure 276: Vln. I has a whole rest, Vln. II has a half note D4. Measure 277: Vln. I has a whole rest, Vln. II has a half note E4. Measure 278: Vln. I has a whole rest, Vln. II has a half note F4.

279

Vln. I

Vln. II

Measures 279-285: Violin I has whole rests. Violin II plays a melodic line: G4 (quarter), A4-B4 (eighths), C5 (quarter), B4-A4 (eighths), G4 (quarter), F#4 (quarter), E4 (half).

286

Vln. I

Vln. II

Measures 286-293: Violin I has whole rests. Violin II continues: D4 (half), E4-F#4 (eighths), G4 (quarter), A4-B4 (eighths), C5 (quarter), B4-A4 (eighths), G4 (quarter), F#4 (quarter), E4 (half).

294

Vln. I

Vln. II

Measures 294-300: Violin I has whole rests. Violin II continues: D4 (half), E4-F#4 (eighths), G4 (quarter), A4-B4 (eighths), C5 (quarter), B4-A4 (eighths), G4 (quarter), F#4 (quarter), E4 (half).

301

Vln. I

Vln. II

Measures 301-307: Violin I has whole rests. Violin II continues: D4 (half), E4-F#4 (eighths), G4 (quarter), A4-B4 (eighths), C5 (quarter), B4-A4 (eighths), G4 (quarter), F#4 (quarter), E4 (half).

308

Vln. I

Vln. II

Measures 308-314: Violin I has whole rests. Violin II continues: D4 (half), E4-F#4 (eighths), G4 (quarter), A4-B4 (eighths), C5 (quarter), B4-A4 (eighths), G4 (quarter), F#4 (quarter), E4 (half).

315

Vln. I

Vln. II

323

Vln. I

Vln. II

330

Vln. I

Vln. II

337

Vln. I

Vln. II

345

Vln. I

Vln. II

352

Vln. I

Vln. II



359

Vln. I

Vln. II



366

Vln. I

Vln. II



373

Vln. I

Vln. II



380

Vln. I

Vln. II



387

Vln. I

Vln. II

Measures 387-393. Violin I: whole rests. Violin II: quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4, quarter note G4.

394

Vln. I

Vln. II

Measures 394-400. Violin I: whole rests. Violin II: quarter note F#4, quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4.

401

Vln. I

Vln. II

Measures 401-408. Violin I: whole rests. Violin II: quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4, quarter note G4.

409

Vln. I

Vln. II

Measures 409-415. Violin I: whole rests. Violin II: quarter note F#4, quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4.

416

Vln. I

Vln. II

Measures 416-422. Violin I: whole rests. Violin II: quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4, quarter note G4.

423

Vln. I

Vln. II

Measures 423-429. Violin I: whole rests. Violin II: eighth-note patterns with sixteenth-note accents.

430

Vln. I

Vln. II

Measures 430-436. Violin I: whole rests. Violin II: eighth-note patterns with sixteenth-note accents.

438

Vln. I

Vln. II

Measures 438-444. Violin I: whole rests. Violin II: eighth-note patterns with sixteenth-note accents.

446

Vln. I

Vln. II

Measures 446-452. Violin I: whole rests. Violin II: eighth-note patterns with sixteenth-note accents.

454

Vln. I

Vln. II

Measures 454-460. Violin I: whole rests. Violin II: eighth-note patterns with sixteenth-note accents.

462

Vln. I

Vln. II



470

Vln. I

Vln. II



478

Vln. I

Vln. II



486

Vln. I

Vln. II



494

Vln. I

Vln. II



502

Vln. I

Vln. II

Measures 502-508. Violin I has whole rests. Violin II plays a descending eighth-note scale: G4, F#4, E4, D4, C4, B3, A3, G3.

509

Vln. I

Vln. II

Measures 509-516. Violin I has whole rests. Violin II plays a descending eighth-note scale: F#4, E4, D4, C4, B3, A3, G3, F#3.

517

Vln. I

Vln. II

Measures 517-523. Violin I has whole rests. Violin II plays a descending eighth-note scale: E4, D4, C4, B3, A3, G3, F#3, E3.

524

Vln. I

Vln. II

Measures 524-531. Violin I has whole rests. Violin II plays a descending eighth-note scale: D4, C4, B3, A3, G3, F#3, E3, D3.

532

Vln. I

Vln. II

Measures 532-538. Violin I has whole rests. Violin II plays a descending eighth-note scale: C4, B3, A3, G3, F#3, E3, D3, C3.

540

Vln. I

Vln. II

Measures 540-547. Violin I: whole rests. Violin II: eighth-note patterns with occasional sixteenth-note pairs.

548

Vln. I

Vln. II

Measures 548-555. Violin I: whole rests. Violin II: eighth-note patterns with occasional sixteenth-note pairs.

556

Vln. I

Vln. II

Measures 556-562. Violin I: whole rests. Violin II: eighth-note patterns with occasional sixteenth-note pairs.

563

Vln. I

Vln. II

Measures 563-570. Violin I: whole rests. Violin II: eighth-note patterns with occasional sixteenth-note pairs.

571

Vln. I

Vln. II

Measures 571-578. Violin I: whole rests. Violin II: eighth-note patterns with occasional sixteenth-note pairs.

579

Vln. I

Vln. II

Violin I: Measures 579-586, all whole rests.

Violin II: Measures 579-586, melodic line with eighth and quarter notes.

587

Vln. I

Vln. II

Violin I: Measures 587-594, all whole rests.

Violin II: Measures 587-594, melodic line with eighth and quarter notes.

595

Vln. I

Vln. II

Violin I: Measures 595-602, all whole rests.

Violin II: Measures 595-602, melodic line with eighth and quarter notes.

603

Vln. I

Vln. II

Violin I: Measures 603-610, all whole rests.

Violin II: Measures 603-610, melodic line with eighth and quarter notes.

611

Vln. I

Vln. II

Violin I: Measures 611-618, all whole rests.

Violin II: Measures 611-618, melodic line with eighth and quarter notes.

619

Vln. I

Vln. II

Violin I: Measures 619-626, all whole rests.

Violin II: Measures 619-626, melodic line with eighth and quarter notes.

627

Vln. I

Vln. II

Violin I: Measures 627-634, all whole rests.

Violin II: Measures 627-634, melodic line with eighth and quarter notes.

635

Vln. I

Vln. II

Violin I: Measures 635-642, all whole rests.

Violin II: Measures 635-642, melodic line with eighth and quarter notes.

643

Vln. I

Vln. II

Violin I: Measures 643-650, all whole rests.

Violin II: Measures 643-650, melodic line with eighth and quarter notes.

651

Vln. I

Vln. II

Violin I: Measures 651-658, all whole rests.

Violin II: Measures 651-658, melodic line with eighth and quarter notes.

659

Vln. I

Vln. II

Violin I: Measures 659-666, all whole rests.

Violin II: Measures 659-666, melodic line with eighth and quarter notes.

667

Vln. I

Vln. II

Violin I: Measures 667-674, all whole rests.

Violin II: Measures 667-674, melodic line with eighth and quarter notes.

675

Vln. I

Vln. II

Violin I: Measures 675-681, all whole rests.

Violin II: Measures 675-681, melodic line with eighth and quarter notes.

682

Vln. I

Vln. II

Violin I: Measures 682-689, all whole rests.

Violin II: Measures 682-689, melodic line with eighth and quarter notes.

690

Vln. I

Vln. II

Violin I: Measures 690-697, all whole rests.

Violin II: Measures 690-697, melodic line with eighth and quarter notes.

698

Vln. I

Vln. II



706

Vln. I

Vln. II



713

Vln. I

Vln. II



721

Vln. I

Vln. II



728

Vln. I

Vln. II



736

Vln. I

Vln. II

744

Vln. I

Vln. II

751

Vln. I

Vln. II

758

Vln. I

Vln. II

765

Vln. I

Vln. II

773

Vln. I

Vln. II

Violin I: Measures 773-779 contain whole rests.

Violin II: Measures 773-779 contain a rhythmic pattern of eighth and sixteenth notes, starting on G4 and moving generally upwards.

780

Vln. I

Vln. II

Violin I: Measures 780-787 contain whole rests.

Violin II: Measures 780-787 contain a rhythmic pattern of eighth and sixteenth notes, continuing the sequence from the previous system.

788

Vln. I

Vln. II

Violin I: Measures 788-795 contain whole rests.

Violin II: Measures 788-795 contain a rhythmic pattern of eighth and sixteenth notes, continuing the sequence.

796

Vln. I

Vln. II

Violin I: Measures 796-803 contain whole rests.

Violin II: Measures 796-803 contain a rhythmic pattern of eighth and sixteenth notes, continuing the sequence.

804

Vln. I

Vln. II

Violin I: Measures 804-811 contain whole rests.

Violin II: Measures 804-811 contain a rhythmic pattern of eighth and sixteenth notes, continuing the sequence.

812

Vln. I

Vln. II

Measures 812-818. Vln. I has whole rests. Vln. II plays a rhythmic pattern of eighth and sixteenth notes.

819

Vln. I

Vln. II

Measures 819-826. Vln. I has whole rests. Vln. II continues the rhythmic pattern.

827

Vln. I

Vln. II

Measures 827-834. Vln. I has whole rests. Vln. II continues the rhythmic pattern.

835

Vln. I

Vln. II

Measures 835-842. Vln. I has whole rests. Vln. II continues the rhythmic pattern.

843

Vln. I

Vln. II

Measures 843-849. Vln. I has whole rests. Vln. II continues the rhythmic pattern.



Fig. S4. Musical ensemble of AKR2-protein interactions. Musical scores for *H. sapiens* AKR2 and interacting proteins RNF10 or THRAP5 (Supplementary information, Fig. S1) were ensemble and analyzed for musical patterns.

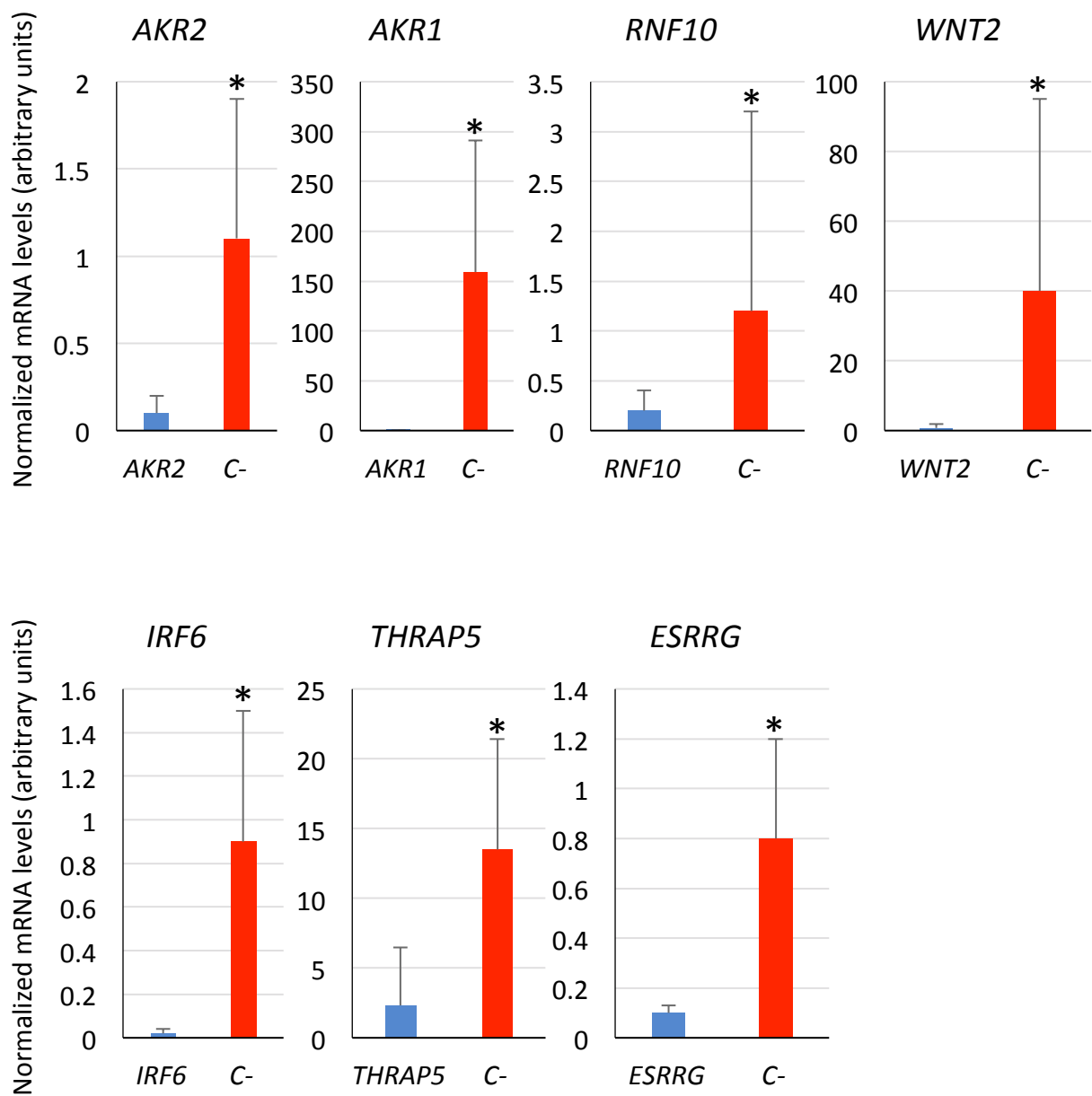


Figure S5. Gene knockdown by RNAi in human placenta cells. The mRNA levels were determined by qRT-PCR and normalized against human β -actin using the genNorm Delta-Delta-Ct (ddCt) method as described previously. Normalized Ct values were compared between test siRNAs-treated placenta cells and controls treated with non-targeting siRNA by Student's t test with unequal variance (*p < 0.01; N = 6). The gene knockdown for each gene with respect to the siRNA negative control was of 93±7% (*AKR2*), 100±0% (*AKR1*), 81±16% (*RNF10*), 98±3% (*WNT2*), 98±2% (*IRF6*), 83±31% (*THRAP5*) and 90±3% (*ESRRG*).

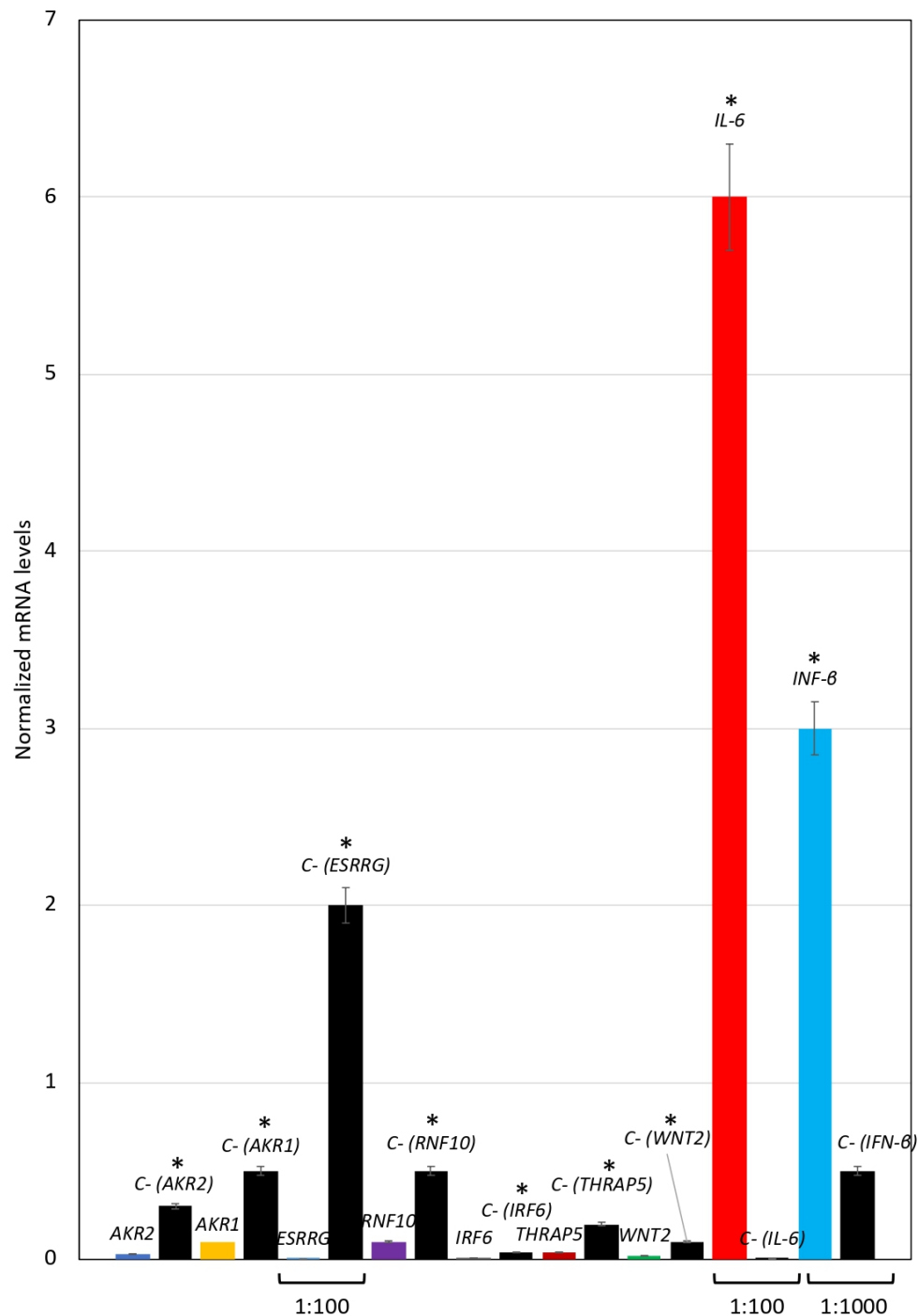


Figure S6. Gene expression in human placenta cells LPS-treated and controls. Human placenta cells were treated with 10 $\mu\text{g/ml}$ of LPS from *Salmonella enterica* serotype typhimurium. LPS-treated and PBS-treated control cells were harvested after 24 h of treatment. The mRNA levels of *AKR2*, *AKR1*, *ESRRG*, *RNF10*, *THRAP5*, *IRF6*, *WNT2*, *INF- β* and *IL-6* genes were determined by qRT-PCR and normalized against human β -actin using the genNorm Delta-Delta-Ct (ddCt) method as described previously. Normalized Ct values were compared between LPS-treated and PBS-treated control (C-) cells by Chi² test (*p < 0.01; N = 6 biological replicates). Values are shown 1 in 100 for *ESRRG* and *IL-6*, and 1 in 1000 for *INF- β* .