

	1	10	20	30	40	50	60	70	
MiHSP90.5		MADAE	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNSSD	-----	AL
MiHSP90.3		MAAET	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNASD	-----	AL
MiHSP90.4		MAAET	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNCS	-----	AL
AtHSP90.2		MADAE	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNSSD	VRSLSLSTLLYTCVSR	IDLADGSVDLGL
SIHSP90.2		MSDV	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNSSD	-----	AL
MiHSP90.2		MAEAHMADV	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNSSD	-----	AL
SIHSP90.1		MADVQMAEA	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNSSD	-----	AL
MiHSP90.1		MADA	AE	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNSSD	-----
AtHSP90.1		MADVQMAEA	ETFAFQAE	INQLLSLI	INTFY	NKEIFLRELI	SNSSD	-----	AL

HATPase_Hsp90-like
HATPase_Hsp90-like

	80	90	100	110	120	130	140	150
MiHSP90.5	DKIRFESLTDKSKLD	AQPELFI	RLVDPKANK	TLSDSGVGMTKADLVNNLGTIARSGTKEFMEAL	QAGADVSMIGQ			
MiHSP90.3	DKIRFESLTDKSKLD	AQPELFI	HIVDPKANN	TLSDSGIGMTKADLVNNLGTIARSGTKEFMEAL	AAGADVSMIGQ			
MiHSP90.4	DKIRFESLTDKSKLD	AQPELFI	HIVDPKANN	TLSDSGIGMTKADLVNNLGTIARSGTKEFMEAL	AAGADVSMIGQ			
AtHSP90.2	DKIRFESLTDKSKLD	GQPELFI	HIIIPDKTNN	TLTIDSGIGMTKADLVNNLGTIARSGTKEFMEAL	AAGADVSMIGQ			
SIHSP90.2	DKIRFESLTDKSKLD	GQPELFI	HIIIPDKANN	TLTIDSGIGMTKADLVNNLGTIARSGTKEFMEAL	AAGADVSMIGQ			
MiHSP90.2	DKIRYESLTDKSKLD	AQPELFI	RLVDPKANK	SLSDSGVGMTKADLVNNLGTIARSGTKEFMEAL	QAGADVSMIGQ			
SIHSP90.1	DKIRFESLTDKSKLD	AQPELFI	RLVDPKANK	TLSDSGVGMTKADLVNNLGTIARSGTKEFMEAL	QAGADVSMIGQ			
MiHSP90.1	DKIRFESLTDKTKLD	AQPELFI	RLVDPKANK	TLSDSGIGMTKADLVNNLGTIARSGTKEFMEAL	QAGADVSMIGQ			
AtHSP90.1	DKIRFESLTDKSKLD	GQPELFI	RLVDPKSNK	TLSDSGIGMTKADLVNNLGTIARSGTKEFMEAL	QAGADVSMIGQ			

HATPase_Hsp90-like

	160	170	180	190	200	210	220	230
MiHSP90.5	FGVGFYSAYLVAEKVIVTTKHNDDEQYIWESQAGGSFTVTRD	ISGEPLGRGTKMTLFLKEDQLEYLEERKIKDL	---					
MiHSP90.3	FGVGFYSAYLVAEKVIVTSKHNDDEQYVWESQAGGSFTVTRDT	SGEPLGRGTKITLHLKEDQLEYLEERRLKDLIKK						
MiHSP90.4	FGVGFYSAYLVAEKVIVTAKHNDDEQYVWESQAGGSFTVTRDT	SGEPLGRGTKITLHLKEDQLEYLEERRLKDLIKK						
AtHSP90.2	FGVGFYSAYLVADKVVVTTKHNDDEQYVWESQAGGSFTVTRDT	SGEPLGRGTKMVLFLKEDQLEYLEERRLKDLVKK						
SIHSP90.2	FGVGFYSAYLVAEKVVVTTKHNDDEQYVWESQAGGSFTVTRDT	SGENLGRGTKMVLFLKEDQLEYLEERRLKDLIKK						
MiHSP90.2	FGVGFYSAYLVAEKVIVTTKHNDDEQYIWESQAGGSFTVTRDV	NGEPLGRGTKITLFLKEDQLEYLEERKLDLVKK						
SIHSP90.1	FGVGFYSAYLVAEKVIVTTKHNDDEQYVWESQAGGSFTVTRDV	SGEQLGRGTKITLFLKEDQLEYLEERRIKDLVKK						
MiHSP90.1	FGVGFYSAYLVAEKVVVTTKHNDDEQYIWESQAGGSFTVRRDV	NGEPLGRGTKMTLFLKEDQLEYLEERRIKDLVKK						
AtHSP90.1	FGVGFYSAYLVAEKVVVTTKHNDDEQYVWESQAGGSFTVTRDV	DGEPLGRGTKITLFLKDDQLEYLEERRLKDLVKK						

HSP90 Superfamily

	240	250	260	270	280	290	300
MiHSP90.5	-----						
MiHSP90.3	HSEFISYPIISLWIEKTT	EKEISDDEDEE	E-EKKKDEEGK	VEDVDEEKEKEE	EKKKKKIKEVSHEWS	LVNKQKPIWMRKPE	
MiHSP90.4	HSEFISYPIISLWT	EKTT	EKEISDDEDEE	E-EKKKDEEGK	VEDVDEEKEKEE	EKKKKKIKEVSHEWS	LVNKQKPIWMRKPE
AtHSP90.2	HSEFISYPIISLWIEKTI	EKEISDDEEEE	E-EKKKDEEGK	VEEVDEEKEKEE	EKKKKKIKEVSHEWD	LVNKQKPIWMRKPE	
SIHSP90.2	HSEFISYPIISLWV	EKT	EKEISDDEEEE	E-EKKKDEEGK	VEEVDEEKEKEE	EKKKKKVEVSNEWS	LVNKQKPIWMRKPE
MiHSP90.2	HSEFISYPIIYLWT	EKTT	EKEVSDDDEDE	-ETKKKEEGD	VEEVDEEKEKKG	-KPKKKVKEVTHEWQ	LINKQKPIWLRKPE
SIHSP90.1	HSEFISYPIIYLWT	EKTT	EKEISDDED	-DEPKKDEEGA	VEEVDEEKEKEE	EKKKKKIKEVSHEWQ	LINKQKPIWLRKPE
MiHSP90.1	HSEFISYPIIYLWT	EKTT	EKEISDDED	-DEPKKKEEGA	VEEVDEEKEE	-KSKKKKIKEVSHEWQ	LINKQKPIWLRKPE
AtHSP90.1	HSEFISYPIIYLWT	EKTT	EKEISDDEDE	DEPKKENEGE	VEEVDEEKEKD	GKPKKKKIKEVSHEWE	LINKQKPIWLRKPE

HSP90 Superfamily

	310	320	330	340	350	360	370	380
MiHSP90.5	- - - - - S L T N D W E E H L A V K H F S V E G Q L E F K A I L F V P K R A P F D L F D T R K K M N N I K L Y V R R V F I M D N C E E L I P							
MiHSP90.3	E I T K E E Y A A F Y K S L T N D W E E H L A V K H F S V E G Q L E F K A I L F V P K R A P F D L F D T R K K P N N I K L Y V R R V F I M D N C E E L I P							
MiHSP90.4	E I T K E E Y A A F Y K S L T N D W E E H L A V K H F S V E G Q L E F K A I L F V P K R A P F D L F D T R K K L N N I K L Y V R R V F I M D N C E E L I P							
AtHSP90.2	E I N K E E Y A A F Y K S L S N D W E E H L A V K H F S V E G Q L E F K A I L F V P K R A P F D L F D T K K K P N N I K L Y V R R V F I M D N C E D I I P							
SIHSP90.2	E I T K E E Y A A F Y K S L T N D W E E H L A V K H F S V E G Q L E F K A V L F V P K R A P F D L F D T K K K P N N I K L Y V R R V F I M D N C D E L I P							
MiHSP90.2	E I T K E E Y S S F Y K S L T N D W E D H L A V K H F S V E G Q L E F K A I L F V P K R A P F D L F D T R K K M N N I K L Y V R R V F I M D N C E E L I P							
SIHSP90.1	E I T K E E Y A S F Y K S L T N D W E D H L A V K H F S V E G Q L E F K A I L F V P K R A P F D L F D S R K K M N N I K L Y V R R V F I M D N C E E L M P							
MiHSP90.1	E I T K E E Y A A F Y K S L T N D W E E H L A V K H F S I E G Q L E F K A I L F V P K R A P F D L F D T R K K M N N I K L Y V R R V F I M D N C E E L I P							
AtHSP90.1	E I T K E E Y A A F Y K S L T N D W E D H L A V K H F S V E G Q L E F K A I L F V P K R A P F D L F D T R K K L N N I K L Y V R R V F I M D N C E E L I P							

HSP90 Superfamily

	390	400	410	420	430	440	450	460
MiHSP90.5	E Y L G F V K G V V D S D D L P L N I S R E T L Q Q N K I L K V I R K N L V K K C I E M F N E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S Q N R							
MiHSP90.3	E Y L S F V K G I V D S E D L P L N I S R E T L Q Q N K I L K V I R K N L V K K C I E L F F E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S T N K							
MiHSP90.4	E Y L S F V K G I V D S E D L P L N I S R E T L Q Q N K I L K V I R K N L V K K C I E L F F E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S T N K							
AtHSP90.2	E Y L G F V K G I V D S E D L P L N I S R E T L Q Q N K I L K V I R K N L V K K C L E L F F E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S Q N R							
SIHSP90.2	E Y L S F V K G I V D S E D L P L N I S R E T L Q Q N K I L K V I R K N L V K K C V E L F F E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S Q N R							
MiHSP90.2	E Y L S F V K G V V D S D D L P L N I S R E M L Q Q N K I L K V I R K N L V K K C I E M F N E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S Q N R							
SIHSP90.1	E Y L G F V K G V V D S D D L P L N I S R E M L Q Q N K I L K V I R K N L V K K C I E M F N E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S Q N R							
MiHSP90.1	E Y L G F V K G V V D S D D L P L N I S R E M L Q Q N K I L K V I R K N L V K K C I E M F S E I A E N K E D Y N K F Y E A F S K N L K L G I H E D S Q N R							
AtHSP90.1	E Y L S F V K G V V D S D D L P L N I S R E T L Q Q N K I L K V I R K N L V K K C I E M F N E I A E N K E D Y T K F Y E A F S K N L K L G I H E D S Q N R							

HSP90 Superfamily

	470	480	490	500	510	520	530
MiHSP90.5	A K L A D L L R Y H S T K S G D E L T S F K D Y V T R M K E G Q K D I Y Y I T G E S K K A V E N S P F L E R L K K K G Y E V L F M V D A I D E Y A V G Q L						
MiHSP90.3	T K L A E L L R Y H S T K S G D E M T S L K D Y V T R M K E G Q N D I Y Y I T G E S K K A V E N S P F L E K L R K K G Y E V L F M V D A I D E Y A I G Q L						
MiHSP90.4	T K L A E L L R Y H S T K S G D E L T S L K D Y V T R M K E G Q N D I Y Y I T G E S K K A V E N S P F L E K L K K K G Y E V L F M V D T I D E Y A V G Q L						
AtHSP90.2	T K I A E L L R Y H S T K S G D E L T S L K D Y V T R M K E G Q N D I F Y I T G E S K K A V E N S P F L E K L K K K G I E V L Y M V D A I D E Y A I G Q L						
SIHSP90.2	A K F A E L L R Y H S T K S G D E M T S L K D Y V T R M K E G Q N D I Y Y I T G E S K K A V E N S P F L E K L K K K G Y E V L Y M V D A I D E Y S I G Q L						
MiHSP90.2	V K L A E L L R Y Y S T K S G D E M T S L K D Y V T R M K E G Q K D I Y Y I T G E S K K A V E N S P F L E K L K K K G Y E V L Y M V D A I D E Y A V G Q L						
SIHSP90.1	A K L A D L L R Y H S T K S G D E L T S L K D Y V T R M K E G Q K D I Y Y I T G E S K K A V E N S P F L E R L K K K G Y E V L Y M V D A I D E Y A V G Q L						
MiHSP90.1	T K L A D L L R Y H S T K S G D E L T S L K D Y V T R M K E G Q K D I Y Y I T G E S K K A V E N S P F L E R L K K K G Y E V L F M V D A I D E Y A V G Q L						
AtHSP90.1	G K I A D L L R Y H S T K S G D E M T S F K D Y V T R M K E G Q K D I F Y I T G E S K K A V E N S P F L E R L K K R G Y E V L Y M V D A I D E Y A V G Q L						

HSP90 Superfamily

	540	550	560	570	580	590	600	610
MiHSP90.5	K E Y D S K K L V S A T K E G L K L D E T E E E K K K K E E K K L S F E N L C K T I K E I L G D K V E K V V S D R I V D S P C C L V T G E Y G W S A N							
MiHSP90.3	K E F E G K K L V S A T K E G L K L D E T E D - E K K K K E T L K E K F E G L C K V I K D V L A D R V E K V V S D R V V D S P C C L V T G E Y G W T A N							
MiHSP90.4	K E F E G K K L V S A T K E G L K L D E S E D - E K K K K E A L K E K F E G L C K V I K D V L G D R V E K V V S D R V V D S P C C L V T G E Y G W T A N							
AtHSP90.2	K E F E G K K L V S A T K E G L K L D E T E D - E K K K K E E L K E K F E G L C K V I K D V L G D K V E K V I V S D R V V D S P C C L V T G E Y G W T A N							
SIHSP90.2	K E F E G K K L V S A T K E G L K L D E S E D - E K K K Q E E L K E K F E G L C K V M K D V L G D K V E K V I V S D R V V D S P C C L V T G E Y G W T A N							
MiHSP90.2	K E Y D G K K L V S A T K E G L K L D E D E - Q D K Q K K E E K K K S F E N L C K T I K E I L G D K V E K V V S D R I V D S P C C L V T G E Y G W T A N							
SIHSP90.1	K E Y D G K K L V S A T K E G L K L D D S E E E K K K K E E K K K S F E N L C K I K D I L G D K V E K V V S D R I V D S P C C L V T G E Y G W T A N							
MiHSP90.1	K E Y D G K K L V S A T K E G L K L D E T E E E K N K K E E K K K S F E N L C K T I K D I L G D K V E K V V S D R I V D S P C C L V T G E Y G W S A N							
AtHSP90.1	K E Y D G K K L V S A T K E G L K L D E T E E E K K K R E E K K K S F E N L C K T I K E I L G D K V E K V V S D R I V D S P C C L V T G E Y G W T A N							

HSP90 Superfamily

	620	630	640	650	660	670	680	690
MiHSP90.5	MERIMKAQALRD	NSMGS	YMSSKKTMEINPDN	G	IMEELRKRAEADKNDKSVKDLVMLL	LFETALLTSGFSLDEPNTF	AS	
MiHSP90.3	MERIMKAQALRD	NSMAG	YMSSKKTMEINPEN	P	IMEELRKRADADKNDKSVKDLVLLL	FETALLTSGFSLDDPNTF	GN	
MiHSP90.4	MERIMKAQALRD	NSMAG	YMSSKKTMEINPEN	P	IMEELRKRSADADKNDKSVKDLVLLL	FETALLTSGFSLDEPNTF	GN	
AtHSP90.2	MERIMKAQALRD	SSMAG	YMSSKKTMEINPEN	S	IMDELKRADADKNDKSVKDLVLLL	FETALLTSGFSLDEPNTF	GS	
SIHSP90.2	MERIMKAQALRD	SSMAG	YMSSKKTMEINPEN	S	IMDELKRADADKNDKSVKDLVLLL	FETALLTSGFSLDEPNTF	GN	
MiHSP90.2	MERIMKAQALRD	NSMSA	YMSSKKTMEINPDN	G	IMEELRKRAEADKNDKSVKDLVLLL	FETALLTSGFSLDDPNTF	AA	
MiHSP90.1	MERIMKAQALRD	TSMS	YMSSKKTMEINPDN	G	IMEELRKRAEADQNDKSVKDLVLLL	FETALLTSGFSLDDPNTF	AA	
SIHSP90.1	MERIMKAQALRD	NSMGS	YMSSKETMEINPDN	G	IMEELRKRAEADKNDKSVKDLVMLL	FETALLTSGFSLDEPNTF	AS	
AtHSP90.1	MERIMKAQALRD	SSMSG	YMSSKKTMEINPDN	G	IMEELRKRAEADKNDKSVKDLVMLL	LYETALLTSGFSLDEPNTF	AA	

HSP90 Superfamily