

AtHST
 MiHST
 SIHST

1 10 20 30 40 50 60 70 80 90 100 110 120

MGCVLGREVSSGIVSESKKLVKLNIE SNNGKEDVVAAKKIDSQAVEVQND E ANQKEKVVVDGEEKPRGVRRRSKPNPRLSNPPKHLRGEQVAAGWPSWLTGVCGEALNGWI PRRAD **SFEKIDK**

SPS1 superfamily

AtHST
 MiHST
 SIHST

130 140 150 160 170 180 190 200 210 220 230 240 250

GQGTYSNVYKAKDMLTGLVALKKVRFDNLEPESVRFMAREILILRKL DHPNVVKLEGLVTSRMSCSLYLVFQYMEHDLAGLAASPEVKFTEPQVKCYMHQLLSGLEHCHNNGVLHRDIKGSNLL

SPS1 superfamily

AtHST
 MiHST
 SIHST

260 270 280 290 300 310 320 330 340 350 360 370

IDDGGVLKIDAFGLASF FDPNHKHPMTRSrvvtLWYRPPPELLLGATDYGVGVDLWSAGCILAE LLAGKPIMPGRTEVEQLHKIYKLCGSPSDDYWKSKLPNATLFKPREPYKRIIRETFKDFPPS

SPS1 superfamily

AtHST
 MiHST
 SIHST

380 390 400 410 420 430 440 450 460 470 480 490 500

SLPLIETLLAIDPAERQTATAALRSEFFTTEPFACFPSSLPKYPPSKEMDAKRRDDEARRLRAASKAOGDGAKKTRTRDRPARAFPAPAEANAELQSNLDRRRMI THANAKSKSEKFPPPHODGAL

SPS1 superfamily

AtHST
 MiHST
 SIHST

510 520 530 540 550 560 570 580 590 600 610 620

MEDS-----NSTASNVARAILAVVDFESTS-----DTRKSAVQFLDSVKSGDVRMLAKTSEHLVKKESSEIRLAFKMLQHLVRLRWDELSPHECRGLVNLS
 GFPLGSSRHMDASFMPPDVPFSTTSFNYSKEPIIQWISGPLDDASVGNPRRRKHAAVNSQDPSKPPSGTVKIGDIRFLASTSEHLVKKDWSTEIRLAFKMLQHLVRLRWEELNPTERRDFSKVS
 MEEHGVSSNV-----ARAIVAALDWNSSPD-----DRKAAVAYLESIKAGDVRMLASTSEHLVKKESSEIRLAFKMLQHLVRLRWDELNPTERRNFASVA

CRM1 superfamily

AtHST
 MiHST
 SIHST

630 640 650 660 670 680 690 700 710 720 730 740 750

IELMSEVANASENWP LKSQSAALVAEIVRREGPDRWQEIFTLTSLSAQGPLQAEVLVMTLRWLPEDITTYNDDELDGRRRLLLRGLTQSLPEILPLLYNLLERHFGAAMSEAGMCHFDLAKQHA
 VKLMSEISDPCEEWALKSQTAAALVAEIVRREGINLWQELFPLVLSLSKGPQAEVLVSMMLRWLPEDITVHNEDLEGDRRLLLRGLTQSLPEILPLLYTLLERHFGATLSEVGRQCQLDCAKQHA
 VDLMSEITNSSEEWALKSQTSAALVAEIVRREGISLWQELFPLVLSLSKGPQAEVLVSMMLRWLPEDITVHNEDLEGDRRLLLRGLTQSLPEILPLLYSLLERHFGAALTEAGRCQLEVARQHA

CRM1 superfamily

760 770 780 790 800 810 820 830 840 850 860 870

AtHST DVVIACTNATVAYTEWAPVVDLARYGILLSGCSFLLSSDFRHHACEVFKLVCSRKRPSDAS--TAEFDASAINLFOITINAAREFLCRSSSSSVITDNDYDFAVCMCESMASLGGSTNLQSLSSD
 MiiHST AAVTATLNAVNAVAYAEWVPLPDLAKYGIHGGGFLSSPDFRHACEVFKLVSPKRKRFSDASSTSEFDASAMRNVFQILMNVSGEFLHRSGTINAGVILESEFEFAEYICESMVSLGGSTNLQCLACD
 SIHST AAVTATLNAVNAVAYAEWVPLPDLAKYGIHGGGILLSSPDFRHACEVFKLVSLRKRPITDA---AVAEFDASAMSNIEQILMKVSGDFLQKSDS-GAVILENEFEFEFAEYICESMVSLGGSTNLQCLAAD

CRM1 superfamily **Exportin-5 superfamily**

880 890 900 910 920 930 940 950 960 970 980 990 1,000

AtHST GGVMAYVYLCQMLGFFQHFKILGLHFEALLFWLSLMRDLLPKPKAATYPSGGGSSTGGDSSSQVDSSEKKKTLSSLINDDLSAALLDVSFQRMCLKKKEKVP TGIALLSLGPLELWSDDEFEGKGFQYRS
 MiiHST DAKLAIIYLCQ-----CLMRDLMSPKALSSGDGSA-ANNTDSSGQVDNEKRKILSFMNDDICSAILLDTSFQRMCLKKREKVLPEATLTLGPLELWSDDEFEGKGFQYRS
 SIHST NSVLSYVYLCQMLGFFKHHKIALHYQSLLFWLTLMRDLLSKPKIIGSGENSA-SNLA-AVGGSG-CDTEKNKILAFVNDICTSSILLDVSFQRLKKEKINPGTSLSVGTLELWSDDEFEGKGFQYRS

Exportin-5 superfamily

1,010 1,020 1,030 1,040 1,050 1,060 1,070 1,080 1,090 1,100 1,110 1,120

AtHST KLELELTKLTASHKPLISSKISERVITLTKHLASPAPLQIVAVMDSQGLALDCIVATLFDGSNEFAGGSSEVHYALRGTIFEGLLQQLLSLKWNEPELMMKVHVHYLDAMGPFLKYFPDAVGSVIN
 MiiHST RLELELVKFAVSSKPLIAGVKVSRVFAITIQSLSSPTPAQDLAVMEVMGSALENVVS AVFDGTNEVGGSTSEVHIALCRITFEGLLQQLLSLKWTEPELVEALGHYLDALGPFLKYFPDAVGSVIN
 SIHST RLELELIRFVAAAKPMVAAAKVCFERSMTITIKSTFLAPYPAQELVILESMGLALENVVINSVFDGSSFTVRSSSEVQQSICRMFEGLLQQLLPLKWTPEALVEVLGHYLDALGPFLKYNPDVVGSVIN

Exportin-5 superfamily

1,130 1,140 1,150 1,160 1,170 1,180 1,190 1,200 1,210 1,220 1,230 1,240 1,250

AtHST KLFELLTSLPHVVKDPAITSRSARARLQICTSFRIRAKAAEKSVLPHMKGADTMGYLAKEGTLRGEHNILGEAFVLMASAGAQQQQEVLAWLLEPLSQQWIQPEWQNNYLSDPMGLVRLCSNT
 MiiHST KLFELLTSLPHVVKDPAITSRARHARLQICTSFRIRAKAADKSVLPHMKGADTMAYLQKEGCLLRGEHNLLGEAFVLMASAGTQQQQEVLAWLLEPLSQQWAQLEWQNNYLSDPGLGFRVRLCSDR
 SIHST KLFELLTSLPHVVKDPAITSARHARLQICTSFRIRAKAADQSLPHMKGADTMALLQKEGCLLRGEHNLLGEAFVLMASAGVQQQILEVLAWLLEPLSKQWTQLDWDQAVYLSDLTGLIRLCADT

Exportin-5 superfamily

1,260 1,270 1,280 1,290 1,300 1,310 1,320 1,330 1,340 1,350 1,360 1,370

AtHST SPMWSTYHTVTFEAKALKRSGYRKSINLNTTSAT---TPASHPMASHLSWMLPPLLKLLRMLHSLWSPSVFCTLPPEMRAAMTMDAERYSTLIGEANPKLSKGVSVYADGS-FEFTKKEGQAIEASES
 MiiHST SLMWSTFHTLTFEAKALKRSGTRKGSMLQNNSAEISSNFLHPMASHLSWMLPPLLKLLRATHSLWSPSVHQILPAEVKIAMTMSDVERSSLGGGNPKLSKGCALTFIDGSQLETSMEGYGEPNES
 SIHST PFMWSTFHTVTFEAKALKRSGLRKGNNSVQT---IPTSDNLHPMASHVSWMLPPLLKLLRATHSLWSPAVSQALPGEIKAAAMMSDVERASLFGGNVKKLPKCTLSFTDGSPPFDMRSREAYAEPIEA

Exportin-5 superfamily

1,380 1,390 1,400 1,410 1,420 1,430 1,440 1,450 1,460 1,470 1,480 1,490 1,500

AtHST DTRNWLKGIKRDGYNVGLSITIGETFFKCLDANYVAMALMENLQSMEFRHLRLIFHFTFTYIVKSCPADMWEAWLGVLLHPLFIHCOQALSSAWPGLLQEGRAKVPDLHGTVQSGSDMKLEVMEE
 MiiHST DTRNWLKGIKRDGYNVGLSATIGDPLFKCLDSQSVTLALMENLQSMEFRHLRLLDHLMVLIPLIKNCPSDMWEAWLEKLLHPLLTHSQQALSYSWSSLLQEGRAKVPDLHGTVQSGSDMKLEVMEE
 SIHST DTRNWLKGIKRDGYNVGLSATIGDPLFKCLDSQSVTLALMENLQSMEFRHLRLLDHLMVLIPLIKNCPSDMWEAWLEKLLHPLLTHSQQALSYSWSSLLQEGRAKVPDLHGTVQSGSDMKLEVMEE

Exportin-5 superfamily

1,510 1,520 1,530 1,540 1,550 1,560 1,570 1,580 1,590 1,600 1,610 1,620

AtHST KLLRDLTREIATLFSITMASPCLNTIGVPVLEHSCHVGRVDMSTLTDLHAFRSNSMVGFLLNHKSVALPALQICLETFTWTDGEATTKVICYFCGVVYLLAKLTNNVELREFVSKDMFSAVIRGLGME
 MiHST KLLRDLTREICSLMSIMASSCLNTIGLPSLEQSCQFTRVDMLSLKDLDSEASSMIGFLLKHKELALPALQISIQAFWTWTDGEAVTKVSSFCAAVIVLAISSNNQELCGFVSKDLFSAALQGLTLE
 SiHST KLLRDLTREITCSILSVFALPILNAGLPSLEPSCYVSRVDELSLKDIAFAATSSMVGFLVHKSIALPALQISLEALRWTWTDGEAVTKVSSFCGAVILLAISTITNMELRDFVCKDLFPATIQALILE

Exportin-5 superfamily

1,630 1,640 1,650 1,660 1,670 1,680 1,690 1,700 1,710 1,720 1,730 1,740 1,747

AtHST SNAIINSPDLVNIICREIFLYLSDRDPAAPROVLLSLPCLTPNDLHAFEEETAKTSSPKEQKQILMRSLLLLGTGNLKKALAAQKSCNVITNVITARTLRPASAPETI-----CAGVLDDEEFVQ
 MiHST SNAVISADLVGLCREIFVYLCDRDPAAPROVLLSLPCITPQDLHAFEDALSKTSSPKEQKQHMKSLLLLGTGNQLKALAAQKSMNVITNVSARLRSSVNVPEITRIEGGETMGLLEAIF
 SiHST SNAFISADLVALCREIFLYLADKH-PAPROILLSLPCITTSQDLHAFEEALTKTASPKEQKQHMKSFLLLATGNKLLKALAAQKSIINVISNVS TKPRNVTPALESKTDEGDAICLAGIV

Exportin-5 superfamily