

GRA44 PD YPSMKF-PRCTMLKCVMQD----TWSKNAVETITVEKKDTNSLKLLLLIGNTGIGEYKSRA *
Soybean_PAP MGTQRSKPSCATIVAIFLAFCCFVSSSKAKLESLOHAPKADGSLSFLLVVDWG-----
Human_ACP5 MDM-----WTALLILQA-LLLPSLAD-----GATP--ALRFVAVGDWG-----G
Arabidopsis_PAP8 MGK-----
PIG_ACP5 MDT-----WTVLLILQASLVLPGAVGTRTNRTRTAPT--ILRFVAVGDWG-----G

GRA44 PD ERKGLWYKLRFLWTNEFDQTVSALAKWHAEKADAVLGLGDFLGIPIGPLSARDERFTKR = *
Soybean_PAP -RKGAYNQS---LVAFQMGVIGEKLD-----VDFVISTGDNFYDNGLTGVFDPSPFEES
Human_ACP5 VPNAPFHTAREMANAKEIARTVQILG-----ADFILSLGDNFYFTGVQDINDKRFQET
Arabidopsis_PAP8 -----IGKDLN-----IDFLISTGDNFYDDGIISPYDSQFQDS
PIG_ACP5 VPNAPFHTAREMANAKAIATTVKTG-----ADFILSLGDNFYFTGVHDAKDKRFQET

GRA44 PD WYDIFVKDAKLDIPWMLTLGEEEEALVNPSASVRHHYTGEHPNWYMPNDAYTATFSFSTMS #
Soybean_PAP FTKIYTAPSLQK-KWYNVLGNHDYRGNAKAQISHVLRDRNRWCFRSY-----
Human_ACP5 FEDVFSDRSLRKVPWYVLAGNHDHLGNVSAQIA--YSKISKRWNFSPFYRLHFK----I
Arabidopsis_PAP8 FTNIYTATSLQK-PWYNVLGNHDYRGNVYAQLSPILRDLDCRWICLSY-----
PIG_ACP5 FEDVFSDFSLRNVPHWVLAGNHDHLGNVSAQIA--YSKISKRWNFSPYYRLRFK----I

GRA44 PD TMANGTIQHEAFNATVINVNTWNLVFGNPIAN-NMQSMDRLMWLSDQL----YTAVNQT
Soybean_PAP TLNSENVDFFFVDTPPY---VDKYFIEDKGHNYDWRGILPRKRYTSNLLKDVDLALRQST
Human_ACP5 PQTNVSVAI FMLDVTTLGNSDDFLSQQPERP--RDVKLARTQ-----LSWLKKQLAAAR
Arabidopsis_PAP8 VVNAEIVDIFFDVTPPF---VDRYFDEPKDHVYDWRGVLPNKYLNLSLLTDVDVALQESM
PIG_ACP5 PRSNVSVAI FMLDVTTLGNSDDFVSQQPERP--RNLALARTQ-----LAWIKKQLAAAK

GRA44 PD TNWLIIMGHLPLVSTGPQGEQGRLOQYVDDLYKNGQPRGPEAVLIQMLLSHYQVDLYVSAH #
Soybean_PAP ATWKVVIGHHTIKNIGHHGD-----TQELLIHFLLP-----LLKANNVDLYMNGH
Human_ACP5 EDYVLVAGHYPVWSIAEHGP-----THCLVKQLRP-----LLATYGVTAAYLCGH
Arabidopsis_PAP8 AKWKIVVGHTIKSAGHHGN-----TIELEKQLLP-----ILEANEVDLYINGH
PIG_ACP5 EDYVLVAGHYPVWSIAEHGP-----THCLVKQLLP-----LLTTHKVTAAYLCGH

GRA44 PD DHFMEYVALEDLSKNTTTAFITSGAA-----V
Soybean_PAP DHCLEHIS----SLDSSVQFLTSGGGS--KAWRGDTKQSEGDEMKFYYDGQ----GFMSV
Human_ACP5 DHNLQYLQ----D-ENGVGYVLSGAGNFMDPSKRHRKVPNGYLRPHYGTEDSLGGFAYV
Arabidopsis_PAP8 DHCLEHIS----SINSGIQFMTSGGGS--KAWKGDVNDWNPQEMRFYYDGQ----GFMSV
PIG_ACP5 DHNLQYLQ----D-ENGLGFVLSGAGNFMDPSKKHLRKPNGYLRFHFGAENSLGGFAYV

GRA44 PD RLLDKDVGRGWIGRLRGALYPI-LCWSGRR--ILYAF
Soybean_PAP HISQTQLRISFFDVFGNAIHK----WNTCKFDS--SDM
Human_ACP5 EISSKEMTVTYIEASGKSLFKTRLPRRARP
Arabidopsis_PAP8 YTSEAELRVVFDGLGHVLRH---WSTLKNGVYSDI
PIG_ACP5 EITPKEMSVTYIEASGKSLFKTKLPRRARSEHQHRA