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MaizeGR          MAAHATLPPFSCSS---TLQTLRRTL--SSRGAHQLRGGFLRLP----SLAAL-PRLAHPC 50
ArabidopsisGR2  MASTPKLTSTISSSSPSLQFLCKKLPPIAHLPPSSSSSSFLSLPKLTLSYSLRPIALLS 60
ArabidopsisGR1  MARKMLVDGEIDK----- 13
**      :      ..

MaizeGR          RRHVSAS-----AAAAPNGASVEGEYDYDLFTIGAGSGGVRASRFASALYGSRVAICEMP 105
ArabidopsisGR2  NHRYYHSRRFVSCASTDNGAESDRHYDFDLFTIGAGSGGVRASRFATS-FGASAAVCELP 119
ArabidopsisGR1  -----VAADEANAT---HYDFDLFVIGAGSGGVRARFASAN-HGAKVVICELP 57
*      :      .*      .**:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*

MaizeGR          FATIASDELGLGGTCLVLRGCVPKKLLVYASKYSHEFEESRFGWYETDPKHDWSTLIA 165
ArabidopsisGR2  FSTISSDTAGGVGGTCLVLRGCVPKKLLVYASKYSHEFEDSHGFGWKYETEPSHDWTTLIA 179
ArabidopsisGR1  FHPISSEEEIGVGGTCLVIRGCVPKKILVYGATYGGLEDAKNYGEINEKVDFTWKKLLQ 117
*      .:*:*:  **:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*

MaizeGR          NKNTLQRLVGIYRNILNNAAGVTLIEGRGKIVDPHTVSV---NG--KLYTAKHILVSVGG 220
ArabidopsisGR2  NKNAELQRLTGIYKNILSKANVKLIEGRGKVIDPHTVDV---DG--KIYTRNIIAVGG 234
ArabidopsisGR1  KKTDEILRLNNIYKRILLANAAVKLYEGEGRVVGFNEVEVRQIDGTKISYTAKHILIIATGS 177
*:      *:  **      .**:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*

MaizeGR          RPSMPDIPGIEHVIDSDAALDLPSKPEKIAIVGGGYIALEFAGIFNGLKSEVHVFIQKK 280
ArabidopsisGR2  RPFIPDIPGKEFAIDSDAALDLPSKPKKIAIVGGGYIALEFAGIFNGLNCEVHVFIQKK 294
ArabidopsisGR1  RAQKPNIPGHELAIITSDAALSLEEFKRAIVLGGGYIAVEFASIWRGMGATVHLFFRKEL 237
*      .:*:*:* *      .*      **      *:*      .**:*:*:*:*:*:*:*:*:*:*:*:*:*

MaizeGR          VLRGFDEEVRDFVAEQMSLRGITFHTEQSPQAITKSNLGLLSLTKNKENFGGFSHVMFAT 340
ArabidopsisGR2  VLRGFDEDVRDFVGEQMSLRGIEFHTEESPEAIKAGDGSFLKTSKGTVEGFSHVMFAT 354
ArabidopsisGR1  PLRGFDDEMRAVARNLEGRGVNLHPQTSLTQLTKTDQG-IKVISSHGEEFVADVFLFAT 296
*****:*:*      .*:*:*:*      .**:*:*:*      .*:*:*:*      .*:*:*

MaizeGR          GRRPNSKNLGLAVGVEMDKNGAIVVDEYSRTSVDSIWAVGDVTNRVNLTPVALMEGGAF 400
ArabidopsisGR2  GRKPNTKNLGLENVGVKMAKNGAIEVDEYSQTSVPSIWAVGDVTDNRINLTPVALMEGGAL 414
ArabidopsisGR1  GRSPNTKRLNLEAVGVLELQAGAVKVDEYSRTNIPSIWAVGDATNRINLTPVALMEATCF 356
**      **:*:*:*:*:*      .**:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*:*

MaizeGR          AKTVFGNEPTKPDYRAIPSAVFSQPPIGQVGLTEEQAIIEY-GDVDVFVANFRPLKATLS 459
ArabidopsisGR2  AKTLFQNEPTKPDYRAVPCAVFSQPPIGTVGLTEEQAIIEY-GDVDVYTSNFRPLKATLS 473
ArabidopsisGR1  ANTAFGGKPTKAEYSNVACAVFCIPPLAVVGLSEEEAVEQATGDIIIVFTSGFNPKNITIS 416
*:      *      .**:*:*:*:*      .**:*:*:*      .**:*:*:*:*:*:*:*:*:*:*:*:*

MaizeGR          GLPDRVLMKILVCATSNKVVGVHMCDDAPEIIQGIAIAVKAGLTKQDFDATIGIHPTSA 519
ArabidopsisGR2  GLPDRVFMKILVCAANTNKVLGVHMCGEDSPEIIQGFVAVKAGLTKADFATVGVHPTAA 533
ArabidopsisGR1  GRQEKTLMKLIVDEKSDKVI GASMCGPDAAEIMQGIAIALKCGATKAQDFDSTVGIHPSSA 476
*      .**:*:*:*:*      .**:*:*:*      .**:*:*:*:*:*:*:*:*:*:*:*:*

MaizeGR          EEFVTMRSPTRKIRKSSTDQVESKDEVVSKQ- 550
ArabidopsisGR2  EEFVTMRAPTRKFRKDSSEGKASPEAKTAAGV 565
ArabidopsisGR1  EEFVTMRSVTRRIAHPKPKNTL----- 499
*****:      **:*:*      .**:*

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**Supplementary Figure 2.** Alignment of cytosolic glutathione reductase 1 (GR1; At3g24710) and the plastid and mitochondria localized GR2 (At2g54660) from *Arabidopsis thaliana* with the single identified homologous GR protein sequence from maize (GenBank accession no. AJ006055) with the CLUSTALW software. The alignment of these sequences showed sequence identity of maize GR of approximately 52% with GR1 and 78% with GR2 from Arabidopsis.