

**Figure S1:** Predicted amino acid sequences of *M. sexta* OR and GR genes newly identified in this study. Genbank accession numbers are given at the beginning of each file name.

>JQ794807 MsOR49 [organism=Manduca sexta] Manduca sexta odorant receptor 49, partial  
GLEPTIETPNYENFVFIKVVAVSFVCFSGIIILVGYVEANMLSLSVEIKEIWNDVAV  
ARDKKEKKEYQHLKNQPMKIVNMYVKRRLVNIERHKANINLLSDVEHLFRIPIG  
AGFLCQTISIVAELGGLKNTYLEVPFGLVQITMDCYIGQKVMASLIFEAVYD  
CKWEKFDNSNMKLVLTILQNSQKTMRLSAGGMATMSFSCLASVLNSIYSTYTTL  
HAKIN

>JQ794808 MsOR50 [organism=Manduca sexta] Manduca sexta odorant receptor 50, partial  
MISIWGTGIRKFGLEYCDLPTMLWNVAFLRPLTLNIDSRHKKPIPLLFYVLTVVITS  
SYFYVYLISMSWFVFRSLETKELIPAMVVLSLGISSEIGTLKFFYTFVYIDKVRKI  
VDEYLECDALVVPFSRFSKNLLTTLRFVKKRAIIYWLVIIGNGFAYWSKPLFMKG  
RHHLEDNLVIYGLEPMLLESPKYEIAAYFLMTAGVCFICYPPANVTILLIVVGYTEA  
QMLALSEEILNIWDDANDHYNNLPSTNQNTNELKSKIINKYIKDRLKDITKSHAR  
NINLLRQVEFVFRGAIAIGYVFLILGLIAELGGLLENTFLQIPFAFIQVAIDCFTGQR  
VMDANIVFETAVIDCKWENFDKTNMKTVLLLLQNSQKTLTSLAGGXTMLNFKC  
XMSVIKSIYSAYTTLRT

>JQ794809 MsOR51 [organism=Manduca sexta] Manduca sexta odorant receptor 51  
MGQDYLLQPPRTQLFYTILGHISTIFGTCQMKWWGPEYKISKWLAWLYFLQRLS  
VGTFGKVVCLSQSVFMALNFNTLSSSVLIVILTITPVGYLVAVKAETAKLKSIEK  
VMKAFMDKIHINCYVRNKDSEYVKTQVQVEFLSRFTTWFLTFFLYICWSAW  
MLQPTLYNIRNIDAILNKTQDFQYYIYLWTPLEYHHNLRNYLIHTVCVYLGVTAI  
TVIITFDCLNMIIIVYHIVGHYILKHNFRTKLADDFDTEKAKEFLVDTIKYHSFIIT  
FKDVQNAFGINVAANYLQKFIEDGLCLYQMMKGD MENFVKYGLMLVIYLGSLI  
MLSVVLEEIKRQNSDLSEVVYSIPWQRMSVSNQKTVMLLLFRTQPDLEFRAACG  
MKAGVQPALSIKSMFSYYVMIKSR

>JQ794810 MsOR52 [organism=Manduca sexta] Manduca sexta odorant receptor 52  
MLSKLKARLNNINERFRDVSFDSLWVNIAPNLVGFVSRGDKAGAAFVFIHLF  
LLTYVYGVGSVVYQWKFAHTIGDYIKSYINVSLVIFIANNSSWWFISKRLQVKDVL  
EKIALSDQLACQTDASQKKYKMLKIIKHIIIGFYAVNYIDELFIYLP HRVDVRND  
YSLTPCVGLEPLTQSPNKEICSFILCLQECTIATAVLNYQALLLLIAHTAAMYRIL  
SAEMMSFN DYDNLEEHQARAKKILPSLVERHVLILCVIDKLKSLYSVSLGVNFGS  
HAVCLLLL LYLPIRESFMFIPIFAYCFVFLYCFQCQLVNASDFERSVYCCGW  
ENVLKERRMVYFMLCEAQRVPEILAADIVPVNIYTFATTLQAMYKFVTVVK

>JQ794811 MsOR53 [organism=Manduca sexta] Manduca sexta odorant receptor 53, partial  
GNTPHTKIFLRQIKINMWVSGIPFGDTKIYIRYYILLSLLISMIIAEGSFFVSRISSEN  
FLELTQLAPCACIGLLSFLKILPITVKRRKIFDLTERLGRLYENILDDTTKKANCKN

VNCNLFKACSQSIFFVLNAVLIS

>JQ794812 MsOR54 [organism=Manduca sexta] Manduca sexta odorant receptor 54, partial

YEIFQITWYLYKKLPI SFLQRLFN NVNIYFSFIFYDLLCTINFFYLPVQLDLIEELVF  
YFMELAAISKVLT FVFFRDKLAKILDALEDPMFQAANGKEQKIIDRAKRFNKRY  
WKIVATVSLTSHATHILSPIVEHLFLSVPLQPPTCSYSFLENTIQQFIYPLYLYQTL  
GMHCHLWFNVNTDSFFLGLVILIIAQLQILDRLRLRTVTDVKKNDDIGQVSTSEAR  
ANYSLTQLNK

>JQ794813 MsOR55 [organism=Manduca sexta] Manduca sexta odorant receptor 55, partial

MGWLERIKGIVLKKSFDFDRPDICLYNFHPQLRILFALKGIFFNKQNSKLRFILPAY  
FNILTLLGMVFESMFIYRGLTIKDYSFAIESFLYFIILTSTPLIYSCFLYHKDKIIQLL  
DDMNEEFK

>JQ794814 MsOR56 [organism=Manduca sexta] Manduca sexta odorant receptor 56, partial

DLIQVWGDITLMTGT SFLFTNMAFITKIINVMVRRDAVLAIIDEGDEVLRSERRIE  
GKAIVKSSNQETSRLLYLYGLFTVVTVFGWAASAEKGSPLRAWYPYDTSKSPA  
YELTYLHQSVAVILLAF LNVS LDV LVSSLTAV

>JQ794815 MsOR57 [organism=Manduca sexta] Manduca sexta odorant receptor 57, partial

WFPWSLDNFKVYIASFVFHAYGASLCCITNPGFQSTIILLVGQLIRQLRILTFILLNL  
NDLVIELVGNKNPRWQA HCTSVLVQC VKHYIKLKRFSNGLNYICRPFYLTLLVS  
TMLVCMCSVKIATSEKLTPDTIKYYVHEFCFILIVLMFCLLGQQVENECRELEV  
T ALEK WYIFNKQHQS NVRIFHIAVSQRMP IYIFGTIPLSLPTFTWFMKT

>JQ794816 MsOR58 [organism=Manduca sexta] Manduca sexta odorant receptor 58, partial

SLWRKYFTKEIQVLKRVYERSDYEDTYEIPRKYLKWSGIRMKHIISKPV SICWL  
V YWYFYFANIVFAFTSELMGTCMTASANTFTDAIAFFQMVPCIGYCGMSLVKSF  
K MVKHRPVFENLITEIGDMWPQRQVDEEEHKIISSALREIKNVVKGYQWGNCLIL  
SFLYAPFWELFKRFSGEKWE PKLQFIYWL PFDPSQP VY YECTLV LQ TWQAITVIW  
TNMTSDIMFCLFLSHISTQFNLLSVKIEKLIYVPTDQQLIEFYPLGQYSEEYLRKNK  
EAVDSYTPQQWEEKNFKEITEIVLQH QALIRLSEDIENMFSLTLLVNVINSSLLICL  
CGFCSVVLEKWNETA

>JQ794817 MsOR59 [organism=Manduca sexta] Manduca sexta odorant receptor 59, partial

KMMAKVKTQGLVTDVMPNIKLLQLSGHFLFNYYADNSGMTMLLRKMYSTVHA  
ILIFVQFVCMGVNMAMYADEVNELTANTITVLF FAHSIIKLGFLAFTSKSFYRTM  
AVWNQSN SHPLFTESDARYHQIALTKMRR

>JQ794818 MsOR60 [organism=Manduca sexta] Manduca sexta odorant receptor 60,

partial

ITLRLKQYIDYHREVLEFTQDISEAFGPMLFVYYLFFHQVSGCLLLECSQMSDAA  
ALMRYGLLTAVLFQQLIQLSVVVEVSGTVTGYLKDAVYNVPWEYMD  
TQDRKTVCFILMNQEPVHINALGLAKVGVQAMD

>JQ794819 MsOR61 [organism=Manduca sexta] Manduca sexta odorant receptor 61,  
partial

KIFQGLEPMLLESPKYEIA YFLMTAGVCFICYPPANVTILLIVVVGYTEAQMLALSE  
EILNIWDDANDHYNLNPSTNQNTNELKSKIINSILKDRLKDITKSHARNINLLRQV  
EFVFRGAIAGYVFLILGLIAELLGLENLFLQIPFAFIQVAIDCFTG

>JQ794820 MsOR62 [organism=Manduca sexta] Manduca sexta odorant receptor 62,  
partial

RNTKMEIKTDKPREKKFKTFNETFSLCAFALAFALYLPNRTNAVKRAVIITLILFN  
GGQLFWFITYTLKCLYTLDILNFARNMTLAVVLILFFIKTYVVIYATKDFAPILIK  
MSNDLLAANELEEDYQAIYEEHIRQGKVGQISWLLIPIVLSAQFPIYAGICMSIESI  
KTDNFTRLMVHDMELLFVEDIQSETPFFQCMFAYNCCQCIVLVPNYCGFDGSFCI  
ATTHLRMKLKLMTHKVHRAFAHAQNTNELRKMVNEAIQDHQDALKFYKDMQ  
HVYGPWLFVAVFMLTSFMISFNLYMIYLLKRVDPKYTLFGLVGVLHIYLPCHYAS  
TLTKVGEEIGPDLYDTPWEKWADPEVTKLLIFMIARAQKTLIVTGNGLVVFNME  
LFKSIIQSSYSFFTLIT

>JQ794821 MsOR63 [organism=Manduca sexta] Manduca sexta odorant receptor 63,  
partial

HDLVAAMVILSLGVCSEVSVIKLGFMAFNSDEVRSIVDHFLECDASVLPGTRYYN  
NIMKTLRIVKRAVGYWVTYRDERGLFITSPPYLGLGRHLSLDMVIYGLEPTIET  
PNYE

>JQ794822 MsOR64 [organism=Manduca sexta] Manduca sexta odorant receptor 64,  
partial

PKPKRNREILMNNIYLGMLVFLTYMPVALAVHLYTEWQDIMSSLDKIADCLPL  
LVSVAIVSYALYRNDLYTLVDYMEKNFKHHSARGLTNMTMWGSYCKARNFG  
RIYTACTMFSVTMYVTLPLILHLWTKEPIQSWVYSDVTQSPFLEFVFLRSFLTQFF  
VGL

>JQ794823 MsOR65 [organism=Manduca sexta] Manduca sexta odorant receptor 65,  
partial

MALKYPWNKSKEWFXRIVFWAYLSGLPNFWIEDLNFSKHFMKFYDKYARALDII  
SCIFVLELLSVFTQHELKSKQQTIQILFCVGHFPFLCLYSALMGHYKEKTRGVLE  
LVVTLKQVHNDPNVEKMMIKQCNMYSIAFTFSCFCSMLFYCVDSLIVLKTGVT  
FNVVIPVLADHR

>JQ794824 MsGR2 [organism=Manduca sexta] Manduca sexta gustatory receptor 2,  
partial

FYCHFTLLVIKYGTTEHTKEFWRFWVPVKRNKVHPANFKKQTPATFQK  
SLRATLLIGQAFFTFYLWSEYFSNDANNVKFIITSWKCFYSLLSFFGQIF

IVVMCIIRVVSTETTLNATTPPIIFYGTTTCFTMLMFFRVATAWPDLVQHVA  
KTEELYPNYDNKLTRTCQ