

Table S3. The amino acid sequences of MIOMTs from *M. lasiocarpa*.

ID	Amino acid sequence
MI01G0494.1	MGSLKNALKLTLEEDEDACMYAMQLASASILPMTLKAAIELDLLEILVRAGPGARLSP ADVVAQLHTENPQAAMVDRMLRLLAAYNVVSCTVSTDAQGRPSRKYGAAPACKYL TKNEDGVSMALALMNQDKVLMESWYYLKDAVLDGGIPFNKAYGMTAFEYHGTD RFNKFVNEGMRNHSTILTKKLLDIYRGFEGVKVLVDVGGGIGATLYMITAKHPHIRGIN FDLPHVISEAPPPGVEHVGGDMFASVPSGDAIFMKWILHDWSDEHCAKILKNCCEAL PEKGKVIVVECVLPVPEPTPRAQGVFNIDLIMLAHNPGGKERTEKEFEGLAKEAGFS GFKASYIFANTWVMEFTK
MI04G2958.1	MAGPHVVDAVGEHSEPYKSASRAHHHHYRHHSSLPLRTMGSVRAAAAALQPSPEED EEACLQAGQLVSSSVLPMTLKAAIELQLLEIIVGAGPGARLSPADVAAQLPTTNPQAAA MVDRI LRLLAAYGIVGCSVEAGPDGRPCRKYGAAPVCKYLTRNEDGVSAALSMLNQ DKVLMESWYHLKDAVLEGGIPFNKAYGMTAFEYHGTDPRFNKFVNEGMRSHSIITKK LLQVYRGFDDVKVLVDVGGGTGATLHMITSTHPHILGINYDLPHVISDAPPLPGVEHV SGDMFESVPGDAILMKWILHDWSDEHCAKILKNCWKALPEKGKLIAVECVLPVPE PSLRTQSVCHVDLIMLAHNPGGKERTEMEFEELAKQAGFSGFKPTYVYASTWALEFTK
MI05G3914.1	MAAAGGGGREDPTSEAGKQGR LAMMELANMISVPMALNAVVR LNVPDAIWQSGSN SPLTAAEILALLRPPPPSSDPSVLQRLLRLLASHGVFAEHRCATSGARRYSLTDVGRTL VPSGDGASYAAYVLQHHQDALVRAWPRLHEAVLDPAGPEPFARANGGV PAYAAYGGD REANALMQRAMRGVSEPFMEALLDGYGSAGFGGVETLVDVGGSSGACLD MIMRRFP SVKRGINF DLPEVVAEAPPLPGVTHVGGNMFESIPAGDAIFMKWVLTTWTDEECTAILR NCYNALPKGGKVIACEPVLPEETDDSRRTALLEGDIFVMAIYRTQGRERTEEEFRQLG SAIGFTA FRAIYLDPFYAVVEYQK
MI08G0855.1	MASENQNGDRRHQEVGHKSLLQSDALYQYILETSVYPREPEAMKELREITAKHPWNL MTTSADEGQFLSMLLKLINAKNTMEIGVYTGYSLLATALALPDDGKILAM DINRENYE IGLPVIQKAGVAHKIDFHEGPALPVL DQMIEDEKNHGSFDFVFDADKDNYINYHKRL LDLVRVGGVIAYDNTLWSGSVVAPPDAPMRKYIRYYRDFVLELNKALAADPRIEICQL PVG DGVTLCRRIK