

Supplementary Data 2

Amino acids sequences for Phylogenetic analysis (Supplementary Fig. 5a)

>Sopen11g005580

MAENSKKLHIAVFPWLAFGHMIPYLELSKLIAQKGHKFSFISTPRNIDSLPKLPPSLAPF
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FTSYWLPSIASKFNIPTGYFSIFVAAYVGFTGPVPGLNNNYEIRMTLEELTVSPKWVPFE
TAVAFKEFELLRIYEGCKEGEEENFYDISRMYKTFENCNFLLVRSCLFEFEPEWLKVVEDI
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>Sopen11g005590

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DFTSYWVPSIASKFNIPSGHFSIYIAAFLGFTGPVPGLNNDYEIRTTLEEYTVPPKWVPF
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DIHRKPVFPLGQLPTTQYEDDSTKIDAWIEIKLWLDKQEKKGKVIYVAFGSEAKPSQNE
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>UGT91A6

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EFEGQWLKLLDLHHMPVLPTGLMPPIVESSSHEKNESWISIKDWLDEKPKGSVVYVA
LGSEVTVGQNEINELARGLELSGSPFFWVLRKSSGLGSIDPIVLPDGFEERTKDRGIVW
KSWAPQLKILSHESVGGLLTHCGWSSII EGLIFGHPLIMLPFLVDQGLNARILQDKGV
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>UGT91A7

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WIIQDFAQYWLAPISTRLGISRIFYSIINAWFLSFLGSFENMINTNNCTSPPKLEDFLVPP
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WLKLLDLHHMPVLPTGLMPPIVESSSHEKNESWISIKEWLDEKPKGSVVYVALGSEV
TVGQNEINELARGLELSGSPFFWVLRKSSGLGSIDPIVLPDGFEERTKDRGIVW KSWAP
QLKILSHESVGGLLTHCGWSSII EGLMFGHSLIMLPFLVDQGLNARIIEDKGVGIEVPR

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>UGT91A8

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VWKSAPQLKILSHESVGGFLTHCGWSSTIEGLIFGLPLIMLPFLVDQGLNARILRDE
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>UGT91A9

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QSEINELASGLELSWSPFFWVLRLKPSGSRNKDPIELPDGFEERTKGRGIVWKSVPQL
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>UGT91R1

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TVAFKLFVSRIFEASMKGEEENIADIVRYRVSENCDFLLVRSCSEFEPEWLKVVGDIH
RKPVPVVGQLPTTPYEDDSTKIDAWREIKLWLDKQEKGVYVAFGSEAKPSQNELTE
LSLGLELSGLPFFWVLRIKRGESDDELIQLPEGFEERTKGRGIVCTSWAPQLKILSHDS
VGGFLTHSGWSSVVEAIQFEKSLVLLTFLADQGINARLLEKKMAYSIPRNDQDGSFT
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>UGT91R2

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PKPVIPVGQLPTTSYEDDNTDIDAWREIKLWLDKQEKGKVIYVAFGSEAKLSQNELTE
LSLGLELSGLPFFWVLRTKRGESDNELIQLPEGFGERTKERGIVYTSWVPQLKILSHDS
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>UGT91R3

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SVGGFLTHAGWSSIVEAIQFEKPLLLL TFLADQGINARLLEKKVAYLIPRNDWDGSFT
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FTRHSVAESLKLVLTKKEGFIYREKIKEMKNLFCDKERQN NYVENLLSFLQNYEKIKA