

Additional file 2.pdf

ClustalW multiple alignment of XYL1p, XYL1.1p and XYL1.2p amino acid sequences from *Spathaspora* species and *Scheffersomyces stipitis* (XYL1p N272D). The highly conserved motif Ile-Pro-Lys-Ser (reported as the coenzyme binding site) is shown inside a rectangle box. The position site 271 (XYL1.2p) or 272 (XYL1p and XYL1.1p) is indicated by an arrow.

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.....10.....20.....30.....40.....50.....60
Sp. passalidarum CBS 10155T XYL1.1p MATIKLSSGHLMPLVGFGCWKVDNATAADQIYNAIKAGYRLFDGABDYGNEKEVGGDLKR
Sp. passalidarum UFMG-CM-Y469 XYL1.1p MATIKLSSGHLMPLVGFGCWKVDNATAADQIYNAIKAGYRLFDGABDYGNEKEVGGDLKR
Sp. arborariae UFMG-CM-Y352T XYL1p MATIKLSSGHLMPAVDFGCGWKVDKATAADQIYQAIAKAGYRLFDGABDYGNEKEVGGDLKK
Sp. brasiliensis UFMG-CM-Y353T XYL1p MATIKLSSGHLMPLVGFGCWKVDNATAADQIYNAIKAGYRLFDGABDYGNEKEVGGDLKR
Sp. xylofermentans UFMG-CM-Y478T XYL1p MATIKLSSGHLMPLVGFGCWKVDNATAADQIYNAIKAGYRLFDGABDYGNEKEVGGDLKR
Sp. suhii UFMG-CM-Y475T XYL1p MATIRLSSGHLMPLVGFGCWKVDNATAADQIYNAIKAGYRLFDGABDYGNEKEVGGDLKR
Sp. roraimanensis UFMG-CM-Y477T XYL1p MATIKLSSGHLMPAVGFGCGWKVDKATAADQIYQAIAKAGYRLFDGABDYGNEKEVGGDLKR
Sc. stipitis CBS6054 XYL1p (N272D) MFSIKLNSGYDMPAVGFGCGWKVDVDTCSQIYRAIKTGYRLFDGABDYANEKLVGAGVKK
Sp. passalidarum CBS 10155T XYL1.2p -MSFKLSSGYEMPKIGFGTWMKDKATIPQQIYDAIKGGIRSFDDGABDYGNEKEVGLGYKK
Sp. passalidarum UFMG-CM-Y469 XYL1.2p -MSFKLSSGYEMPKIGFGTWMKDKATIPQQIYDAIKGGIRSFDDGABDYGNEKEVGLGYKK
Clustal consensus ::*:**:* ** :** **:* * :.*** ** * * ** ** ** * * * * *

.....70.....80.....90.....100.....110.....120
Sp. passalidarum CBS 10155T XYL1.1p AIDGGLVKREELFITSKLWNNYHDPKNVETALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sp. passalidarum UFMG-CM-Y469 XYL1.1p AIDGGLVKREELFITSKLWNNYHDPKNVETALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sp. arborariae UFMG-CM-Y352T XYL1p AIDGGLVKREELFITSKLWNNYHDPKNVETALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sp. brasiliensis UFMG-CM-Y353T XYL1p AMDEGLVKREELFVTSKLWNNYHDPKNVETALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sp. xylofermentans UFMG-CM-Y478T XYL1p AIDGGLVKREELFITSKLWNNYHDPKNVETALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sp. suhii UFMG-CM-Y475T XYL1p AIDGGLVKREELFITSKLWNNYHDPKNVETALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sp. roraimanensis UFMG-CM-Y477T XYL1p AIDGGLVKREELFITSKLWNNYHDPKNVETALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sc. stipitis CBS6054 XYL1p (N272D) AIDGGLVKREELFITSKLWNNYHDPKNVEKALNRTLSDLQLDYVDLFLIHFFVTKFVPL
Sp. passalidarum CBS 10155T XYL1.2p AIDGGLVKREELFITSKLWNNYHDPKNVEKALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Sp. passalidarum UFMG-CM-Y469 XYL1.2p AIDGGLVKREELFITSKLWNNYHDPKNVEKALNRTLSDLQLDYVDLFLIHFFIAFKFVPL
Clustal consensus *::*:**:* ** :** **:* * :.*** ** * * ** ** ** * * * * *

.....130.....140.....150.....160.....170.....180
Sp. passalidarum CBS 10155T XYL1.1p EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. passalidarum UFMG-CM-Y469 XYL1.1p EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. arborariae UFMG-CM-Y352T XYL1p EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. brasiliensis UFMG-CM-Y353T XYL1p EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. xylofermentans UFMG-CM-Y478T XYL1p EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. suhii UFMG-CM-Y475T XYL1p EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. roraimanensis UFMG-CM-Y477T XYL1p EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sc. stipitis CBS6054 XYL1p (N272D) EEKYPGFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. passalidarum CBS 10155T XYL1.2p EERYPPCFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. passalidarum UFMG-CM-Y469 XYL1.2p EERYPPCFYCGDGNFHYENVFLDQVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Clustal consensus **:* ** ** * :** **:* * :.*** ** * * ** ** ** * * * * *

.....190.....200.....210.....220.....230.....240
Sp. passalidarum CBS 10155T XYL1.1p IKPAVLQIEHHYPYLQPPKLIYVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. passalidarum UFMG-CM-Y469 XYL1.1p IKPAVLQIEHHYPYLQPPKLIYVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. arborariae UFMG-CM-Y352T XYL1p IKPAVLQIEHHYPYLQPPKLIYVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. brasiliensis UFMG-CM-Y353T XYL1p IKPAVLQIEHHYPYLQPPKLIYVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. xylofermentans UFMG-CM-Y478T XYL1p IKPAVLQIEHHYPYLQPPKLIYVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. suhii UFMG-CM-Y475T XYL1p IKPAVLQIEHHYPYLQPPKLIYVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. roraimanensis UFMG-CM-Y477T XYL1p IKPAVLQIEHHYPYLQPPKLIYVQKQGIATAYSSFGPQSFLELNQRALNPTLFEHDT
Sc. stipitis CBS6054 XYL1p (N272D) IKPSVLQVEHHYPYLQPPRLIEFAQKQGLVVTAYSSFGPQSFLELNQRALNPTLFEHDT
Sp. passalidarum CBS 10155T XYL1.2p IKPAVLQVEHHYPYLQPPRLIEFAQKQGLVVTAYSSFGPQSFLELNQRANPTLRFDEHV
Sp. passalidarum UFMG-CM-Y469 XYL1.2p IKPAVLQVEHHYPYLQPPRLIEFAQKQGLVVTAYSSFGPQSFLELNQRANPTLRFDEHV
Clustal consensus ***:***:*****:***:..*:.:..*..***** ** ** * * * * * :.

.....250.....260.....270.....280.....290.....300
Sp. passalidarum CBS 10155T XYL1.1p IKSISRLNKTPAQVLLRWATQRNIAVTEPKSNPAPRLAQNLDVTSFDLDEEDFNIAISALD
Sp. passalidarum UFMG-CM-Y469 XYL1.1p IKSISRLNKTPAQVLLRWATQRNIAVTEPKSNPAPRLAQNLDVTSFDLDEEDFNIAISALD
Sp. arborariae UFMG-CM-Y352T XYL1p IKSISRLNKTPAQVLLRWASQRGIATVTEPKSNPAPRLAENLDVTSFDLDEEDFNIAISALD
Sp. brasiliensis UFMG-CM-Y353T XYL1p IKSISRLNKTPAQVLLRWATQRNIAVTEPKSNPAPRLAQNLDVTSFDLDEEDFNIAISALD
Sp. xylofermentans UFMG-CM-Y478T XYL1p IKSISRLNKTPAQVLLRWATQRNIAVTEPKSNPAPRLAQNLDVTSFDLDEEDFNIAISALD
Sp. suhii UFMG-CM-Y475T XYL1p IKSISRLNKTPAQVLLRWATQRNIAVTEPKSNPAPRLAQNLDVTSFDLDEEDFNIAISALD
Sp. roraimanensis UFMG-CM-Y477T XYL1p IKSISRLNKTPAQVLLRWASQRGIATVTEPKSNPAPRLAENLDVTSFDLDEEDFNIAISALD
Sc. stipitis CBS6054 XYL1p (N272D) IKKIAARKGKSPAQVLLRWSSQRGIATVTEPKSDTVERLLENKDNVNSFDLDEEDFNIAISALD
Sp. passalidarum CBS 10155T XYL1.2p IKKIAARRGRTPAQVILRWATQRNVVTEPKSDTVERLLENLAVDFDLDEEDFKKIAALD
Sp. passalidarum UFMG-CM-Y469 XYL1.2p IKKIAARRGRTPAQVILRWATQRNVVTEPKSDTVERLLENLAVDFDLDEEDFKKIAALD
Clustal consensus ** * : : : : * * * * * : * * * * * : * * * * * : * * * * *

.....310.....
Sp. passalidarum CBS 10155T XYL1.1p INLRFNDPVDWDNIPIFV
Sp. passalidarum UFMG-CM-Y469 XYL1.1p INLRFNDPVDWDNIPIFV
Sp. arborariae UFMG-CM-Y352T XYL1p INLRFNDPVDWDNIPIFV
Sp. brasiliensis UFMG-CM-Y353T XYL1p INLRFNDPVDWDNIPIFV
Sp. xylofermentans UFMG-CM-Y478T XYL1p INLRFNDPVDWDNIPIFV
Sp. suhii UFMG-CM-Y475T XYL1p INLRFNDPVDWDNIPIFV
Sp. roraimanensis UFMG-CM-Y477T XYL1p INLRFNDPVDWDNIPIFV
Sc. stipitis CBS6054 XYL1p (N272D) INLRFNDPVDWDKIPIFV
Sp. passalidarum CBS 10155T XYL1.2p ANLRFNDPVDWDHIPIFV
Sp. passalidarum UFMG-CM-Y469 XYL1.2p ANLRFNDPVDWDHIPIFV
Clustal consensus *****:*****

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