
BAA25847.1 Fla-xylanase Aspergillus aculeatus
ALI87002.1 xylanase GH10 Aspergillus aculeatus
CAI29148.1 unnamed protein product Aspergillus aculeatus
BAG12101.1 endo-14-beta-xylanase Penicillium citrinum
AAF71268.1 endo-14-beta-D-xylanase A Talaromyces purpureogenus
AAV65488.1 endo-14-beta-xylanase Penicillium canescens
AAA16427.1 xylanase Penicillium chrysogenum
AAS93681.1 endo-14-beta-D-xylan xylanohydrolase preucrsor Penicillium chrysogenum
AHF72523.1 Xyn-I Rhizopus oryzae
ACR83565.1 endo-14-beta-xylanase A Aspergillus niger
ACJ26381.1 endo-14-beta-xylanase A Aspergillus niger
AIC36735.1 endo-14-beta-xylanase Aspergillus niger
CAA03655.1 YLANASE Aspergillus niger
BAA03575.1 xylanase A precursor Aspergillus kawachii
ADW20312.1 endo-14-beta-xylanase glycohydrolase family 10 precursor protein Aspergillus usamii
ADM34973.1 endo-14-beta-xylanase Penicillium oxalicum
AAY86996.1 xylanase family 10 Aspergillus terreus
AFD63136.1 endo-beta-14-xylanase Aspergillus terreus
BAA92882.1 endo-14 beta-D-xylanase Aspergillus sojae
ACJ26383.1 xylanase f3 Aspergillus oryzae
BAB69073.1 xylanseF3 Aspergillus oryzae
BAE56751.1 unnamed protein product Aspergillus oryzae RIB40
BAA75475.1 xylanaseF1 Aspergillus oryzae
BAE65852.1 unnamed protein product Aspergillus oryzae RIB40
EAA64983.1 XYNC EMENI Endo-14-beta-xylanase precursor (34kDa xylanase) (14-beta-D-xylan xylanohydrolase) (X34) Aspergillus nidulans FGSC A4
CAA90075.1 xylanase Aspergillus nidulans
ABF50851.1 endo-beta-14-xylanase Aspergillus nidulans
BAA89465.1 xylanase III Hypocrea jecorina
BAA89465.2 xylanase III Trichoderma reesei
ABY71931.1 endoxylanase Trichoderma pseudokoningii
AAC41684.1 putative endo-beta-14-D-xylanase precursor Pyricularia grisea
AAU89274.1 family 10 xylanase Cryptovalsa sp. BCC 7197
CAA76571.1 endo-14-beta-xylanase Claviceps purpurea
CEF88877.1 unnamed protein product Fusarium graminearum
AAC06239.1 family F xylanase Fusarium oxysporum f. sp. lycopersici
CEF86546.1 unnamed protein product Fusarium graminearum
AGG68961.1 XynC Humicola insolens
AAM95237.1 endo-beta-14-D-xylanase Pyricularia grisea
XP 365543.1 xylanase family 10Magnaporthe oryzae 70-15
AAP81158.1 xylanase Volvariella volvacea
CAB65468.1 xylanase A Thermoascus aurantiacus
AAF24127.1 endo-14-beta-xylanase A precursor Thermoascus aurantiacus
AAG44992.1 endo-14-B-xylanase A Phanerochaete chrysosporium
AAG44993.1 endo-14-B-xylanase A Phanerochaete chrysosporium
ABZ88797.1 endo-14-beta-xylanase A precursor Phanerochaete chrysosporium
AEK97220.1 XynA Phanerochaete chrysosporium
ABZ88799.1 endo-14-beta-xylanase C precursor Phanerochaete chrysosporium
AEK97221.1 XynC Phanerochaete chrysosporium
XP 002470423.1 endo-14-B-xylanase Postia placenta Mad-698-R
AFR33046.1 endo-14-beta-xylanase precursor Gloeophyllum trabeum
AEJ35165.1 beta-14-endoxylanase Gloeophyllum trabeum
AFR33047.1 endo-14-beta-xylanase precursor Gloeophyllum trabeum
CAB05665.1 endo-14-beta xylanase Agaricus bisporus
CAB05886.1 endo-14-beta xylanase Agaricus bisporus
ABX71815.1 xylanase Streptomyces sp. S9
AHA59264.1 xylanase II Volvariella volvacea
ACP27611.1 endo-14-beta-xylanase Penicillium canescens
AOW72084.1 thermostable GH10 xylanase Talaromyces leycettanus
ACS96449.1 family-10 endo-beta-14-xylanase Bispora sp. MEY-1
AEO58598.1 glycoside hydrolase family 10 protein Thermothelomyces thermophila ATCC42464
AGG68962.1 XynA Humicola insolens
ASL68670.1 xylanase uncultured bacterium
EPQ55122.1 glycoside hydrolase Gloeophyllum trabeum ATCC 11539
EAA78230.1 hypothetical protein FG06445.1 Gibberella zeae PH-1
AGG68960.1 XynB Humicola insolens
BAE71410.1 endo-14-beta-xylanase Aureobasidium melanogenum
BAA19220.1 xylanase Humicola grisea
AEO60457.1 glycoside hydrolase family 10 protein Thermothelomyces thermophila ATCC 42464
ADZ99358.1 endo-14-beta-xylanase B Phialophora sp. CGMCC 3328
AEO68222.1 glycoside hydrolase family 10 protein Thielavia terrestris NRRL 8126
AGV01049.1 xylanase Malbranchea cinnamomea
AIG99409.1 endo-beta-14-xylanase GH10 Malbranchea pulchella
CAI29149.1 unnamed protein product Aspergillus aculeatus
AFP43760.1 endo-14-beta-D-xylanase precursor Aspergillus oryzae
CAD34597.1 unnamed protein product Rasamsonia emersonii
CAG25554.1 endo-14-xylanase D Talaromyces funiculosus
BAN82655.1 beta-14-xylanase Talaromyces cellulolyticus
ABK51955.1 endo-14-beta-xylanase (glycosyl hydrolase family 10) Acidothermus cellulolyticus 11B
ADN94682.1 endo-14-beta-endoxylanase Hypothenemus hampei
ADE37527.1 xylanase Streptomyces megasporus
CAB02654.1 beta-14-endoxylanase Thermobifida alba
AAZ56956.1 xylanase. Glycosyl Hydrolase family 10 Thermobifida fusca YX
AAA56791.1 exoglucanase Cellulomonas fimi
AAA56792.1 exo-beta-14-glucanase Cellulomonas fimi
AEA30147.1 exoglucanase Cellulomonas fimi ATCC 484
AEE45406.1 glycoside hydrolase family 10 Cellulomonas fimi ATCC 484
ACY75514.1 endo-beta-14-xylanase Cellulosimicrobium sp. HY-13
CDG66213.1 endo-beta-14-xylanase Cellulosimicrobium cellulans
AAC45554.1 Xys1 Streptomyces halstedii
AIT37787.1 beta-14-xylanase Streptomyces mexicanus
ADZ99362.1 xylanase Streptomyces megasporus
AAD32559.2 xylanase-arabinofuranosidase bifunctional enzyme Streptomyces chattanoogensis
ACU95608.1 endo-14-beta-xylanase (glycosyl hydrolase family 10) Saccharomonospora viridis DSM 43017
AAZ76373.1 beta 14-xylanase Cellulomonas fimi ATCC 484
ACM41799.1 beta-14-endo-xylanase precursor Demequina sp. JK4
CAD48748.1 endoxylanase Nonomuraea flexuosa
CAD48748.2 endoxylanase precursor Thermopolyspora flexuosa
ABR14270.1 xylanase Streptomyces fradiae
BAA19777.1 xylanase Streptomycesthermoviolaceus
BAD02382.1 xylanase I Streptomyces thermoviolaceus
AAF04600.1 xylanase A precursor Streptomyces thermocyaneoviolaceus
ACF57946.1 xylanase Streptomyces sp. S27
BAK19338.1 endo-beta-14-xylanase Streptomyces sp. SWU10
AAC26525.1 xylanase A precursor Streptomyces lividans 1326
CAD55241.1 xylanase A Streptomyces coelicolor A3(2)
AIX97010.1 glycoside hydrolase family 10 xylanase precursor uncultured bacterium
ACR61563.1 endo-14-beta-xylanase precursor Streptomyces sp. TN119
ABK52146.1 endo-14-beta-xylanase (glycosyl hydrolase family 10) Acidothermuscellulolyticus 11B
ABX88978.1 xylanase Cellulosimicrobium sp. HY-12
AGT51093.1 XylH Microbacterium trichothecenolyticum
ABL73883.1 endo-14-beta xylanase Umxyn10A uncultured microorganism
AAZ56824.1 xylanase. Glycosyl Hydrolase family 10 Thermobifida fusca YX
AFE82289.1 endo-14-beta-xylanase precursor Lechevalieria sp. HJ3
ADL60499.1 xylanase Saccharopolyspora pathumthaniensis
ACJ73932.1 endo-beta-14-xylanase precursor Kocuria sp. MN22
AGW80520.1 alkaliphilic xylanase Kocuria sp. 3-3
AGU09747.1 Glycosyl hydrolase family 10 uncultured organism
ALO19936.1 xylanase Massilia sp. RBM26
BAB40957.1 xylanase Acidobacterium capsulatum
ADX05712.1 putative carbohydrate-active enzyme uncultured organism
ADX05694.1 putative carbohydrate-active enzyme uncultured organism
ADX05711.1 putative carbohydrate-active enzyme uncultured organism
ADN02828.1 endo-14-beta-xylanase B precursor Spirochaeta thermophila DSM 6192
AAA23286.1 xylanase Z Hungateiclostridium thermocellum
ABN53181.1 glycoside hydrolase family 10 Hungateiclostridium thermocellum ATCC 27405
ABG76966.1 GH10 xylanase Ruminiclostridium cellulolyticum H10
ACL75297.1 glycoside hydrolase family 10 Ruminiclostridium cellulolyticum H10
ADN02449.1 endo-14-beta-xylanase B Spirochaeta thermophila DSM 6192
CAA90235.1 xylanase Thermotoga neapolitana
AAN16480.1 endo-14-beta-xylanase Thermotoga neapolitana
ACM22799.1 Endo-14-beta-xylanase B precursor Thermotoga neapolitana DSM 4359
AAA90913.1 endo-14-beta-xylanase Thermotoga sp.
AAP97078.1 xylanase B Thermotoga maritima
AHD18160.1 endo-14-beta-xylanase Thermotoga maritima MSB8
NP 227886.1 endo-14-beta-xylanase B Thermotoga maritima MSB8
AAD35164.1 endo-14-beta-xylanase B Thermotoga maritima MSB8
AKE27878.1 14-beta-xylanase Thermotoga maritima MSB8
AGL48993.1 Endo-14-beta-xylanase A precursor Thermotoga maritima MSB8
AAQ01666.1 endo-14-beta-xylanase B Thermotoga maritima
ABQ46873.1 Endo-14-beta-xylanase Thermotoga petrophila RKU-1
CAA88764.2 endo-beta-14-xylanase Cellvibrio japonicus
ACE84815.1 endo-beta-14-xylanase xyn10C Cellvibrio japonicus Ueda107
CAA88762.1 endo-beta-14-xylanase Cellvibrio mixtus
AFA53084.1 family GH10 xylanase Psychrobacter sp. 2-17
CAA33469.1 unnamed protein product Cellvibrio japonicus
ACE85439.1 endo-14-beta-xylanase xyn10A Cellvibrio japonicus Ueda107
● WP 096428726.1 original
ABQ06877.1 Candidate xylanase Glycosidase hydrolase family 10 Flavobacterium johnsoniae UW101
CCO21036.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21321.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21121.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21155.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21208.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21110.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21291.1 glycoside hydrolase family 10 protein termite gut metagenome
AAB81559.1 xylanase Prevotella ruminicola
EDV05072.1 putative glycosyl hydrolase family 10 Bacteroides intestinalis DSM 17393
AAB38389.1 (14)-beta-xylan endohydrolase isoenzyme X-I Hordeum vulgare subsp. vulgare
AAK73567.1 14-beta-D xylan xylanohydrolase Hordeum vulgare subsp. vulgare
AAB51668.1 xylan endohydrolase isoenzyme X-IHordeum vulgare
CAH60861.1 endo-14-beta-xylanase Hordeum vulgare subsp. vulgare
AAD41893.1 (14)-beta-xylan endohydrolase Triticum aestivum
AAX33301.1 putative endo-14-beta-xylanase Populus tremula x Populus tremuloides
AAM21605.1 beta-14-xylanase Bacillus pumilus
AHH02587.1 glycosyl hydrolase family 10 xylanase Bacillus sp. HJ14
CAE51307.1 beta-14-xylanase Hungateiclostridium thermocellum
ABN53790.1 glycoside hydrolase family 10 Hungateiclostridium thermocellum ATCC 27405
AAF70549.1 tapetum-specific endoxylanase Zeamays
AAP31839.1 cellulase EGX Ampullaria crossean
ACC86116.1 multi-functional cellulase Ampullaria crossean
AAP31839.2 family 10 cellulase Ampullaria crossean
AHB33335.1 multi-functional cellulase Ampullaria crossean
EMS72420.1 Beta-14-xylanase Ruminiclostridium cellobioparum subsp. termitidis CT1112
AHG52958.1 extreme thermostable endo-beta-14-xylanase 10K uncultured organism
AHF24695.1 family 10 endo-beta-14-xylanase uncultured bacterium Contig1584b
AHF25084.1 family 10 endo-beta-14-xylanase uncultured bacterium Contig52
AHF26413.1 xylanase uncultured bacterium Contig1468 n 1482 cl
ACX75387.1 glycoside hydrolase family 10 Fibrobacter succinogenes subsp. succinogenes S85
ADL25544.1 xylanase XynB Fibrobacter succinogenes subsp. succinogenes S85
AAG36763.1 family 10 glycosyl hydrolase XynB Fibrobacter succinogenes subsp. succinogenes S85
ADX05720.1 putative carbohydrate-active enzyme uncultured organism
ADL27036.1 xylanase XynE Fibrobacter succinogenes subsp. succinogenes S85
AAG36765.1 family 10 glycosyl hydrolase XynE Fibrobacter succinogenes subsp. succinogenes S85
ACX75386.1 Carbohydrate binding family 6 Fibrobacter succinogenes subsp. succinogenes S85
AAG02560.1 xylanase Xyn10L Fibrobacter succinogenes subsp. succinogenes S85
ACX75384.1 Carbohydrate binding family 6 Fibrobacter succinogenes subsp. succinogenes S85
AAG36764.1 family 10 glycosyl hydrolase XynD Fibrobacter succinogenes subsp. succinogenes S85
ADL26381.1 xylanase XynD Fibrobacter succinogenes subsp. succinogenes S85
ADX05716.1 putative carbohydrate-active enzyme uncultured organism
ADX05708.1 putative carbohydrate-active enzyme uncultured organism
BAV00621.1 xylanase Ruminiclostridium josui JCM 17888
CAA38389.1 Xylanase B Cellvibrio japonicus
ACE84499.1 endo-14-beta-xylanase xyn10B Cellvibrio japonicus Ueda107
BAD88441.1 beta-14-xylanase Pseudomonas sp. ND137
AAM39089.1 xylanase Xanthomonas citri pv. citri str. 306
NP 644553.1 xylanase Xanthomonas axonopodis pv. citri str. 306
AAK01133.1 secreted xylanase Xanthomonas oryzae pv. oryzae
AFN75321.1 xylanase Melioribacter roseus P3M-2
CAA72323.2 xylanase Rhodothermus marinus DSM 4252
ACY47961.1 glycoside hydrolase family 10 Rhodothermus marinus DSM 4252
ADN02703.1 predicted xylanase Spirochaeta thermophila DSM 6192
BAK22544.1 xylanase Paenibacillus curdlanolyticus
BAM22646.1 endo-14-beta-xylanase Paenibacillus curdlanolyticus
CBA13561.1 xylanase A Paenibacillus barcinonensis
AAG23527.1 xylanase B Paenibacillus sp. KCTC8848P
AAK76799.1 Xylanase glycosyl hydrolase family 10 (plasmid) Clostridium acetobutylicum ATCC 824
NP 149217.1 xylanase (plasmid) Clostridium acetobutylicum ATCC 824
AAK76861.1 Xylanase glycosyl hydrolase family 10 (plasmid) Clostridium acetobutylicum ATCC 824
NP 149279.1 xylanase (plasmid) Clostridium acetobutylicum ATCC 824
ADX05699.1 putative carbohydrate-active enzyme uncultured organism
AFK83737.1 xylanase A uncultured bacterium 35A20
BAA82143.1 xylanase C Thermoclostridium stercorarium
CAD48314.1 endoxylanase XynC Thermoclostridium stercorarium
BAC45001.1 xylanase 5 Paenibacillus sp. W-61
AEI17090.1 xylanase A uncultured microorganism
BAB20931.1 xylanase A Ruminiclostridium josui
ABZ80916.1 xylanase 10A Paenibacillus curdlanolyticus
ACS98901.1 Endo-14-beta-xylanase Paenibacillus sp. JDR-2
CAA43712.1 beta-14-D-xylanase Butyrivibrio fibrisolvens
ADN01802.1 beta-14-xylanase Spirochaeta thermophila DSM 6192
AHF25644.1 endo-14-beta-xylanase uncultured bacterium Contigcl 24
AHF26235.1 endo-14-beta-xylanase uncultured bacterium Contigcl 1794
AHF25590.1 endo-14-beta-xylanase uncultured bacterium Contigcl 22
AHF24999.1 endo-14-beta-xylanase uncultured bacterium Contig33
AHF26303.1 endo-14-beta-xylanase uncultured bacterium Contig1588 n 1603 cl
AEW47914.1 xylanase uncultured microorganism
ADX05681.1 putative carbohydrate-active enzyme uncultured organism
AHF23772.1 endoxylanase uncultured bacterium Contig1549a
ADX05674.1 putative carbohydrate-active enzyme uncultured organism
ADX05683.1 putative carbohydrate-active enzyme uncultured organism
ADX05700.1 putative carbohydrate-active enzyme uncultured organism
AFU34339.1 endo-14-beta-xylanase bacterium enrichment culture clone MC3F
BAA09971.1 xylanase Eubacterium ruminantium
EEV01588.1 glycosyl hydrolase family 10 Roseburia intestinalis L1-82
BAA21516.2 xylanase Hungateiclostridium thermocellum
ABN53059.1 glycoside hydrolase family 10 Hungateiclostridium thermocellum ATCC 27405
CAB65753.1 xylanase 10B precursor Polyplastron multivesiculatum
CBL16579.1 Beta-14-xylanase Ruminococcus champanellensis 18P13 JCM 17042
AAT37531.1 xylanase B Clostridium cellulovorans
CAA77476.1 XYLA of Ruminococcus flavefaciens
CAA58242.1 endo-14-beta-xylanase Hungateiclostridium thermocellum YS
ABN52146.1 glycoside hydrolase family 10 Hungateiclostridium thermocellum ATCC27405
CBL17682.1 Beta-14-xylanase Ruminococcus champanellensis 18P13 JCM 17042
ZP 08159615.1 glycosyl hydrolase family 10 Ruminococcus albus 8
AEE64768.1 Xyn10B Ruminococcus albus 8
CAA89207.1 endo-beta-(14)-xylanase Prevotella bryantii B14
CAD21011.1 endo-14-beta-xylanase Prevotella bryantii B14
AEB69780.1 xylanase A Sorangium cellulosum
AAD47087.1 xylanase G Cellvibrio japonicus
ACE84280.1 endo-14-beta-xylanase xyn10D Cellvibrio japonicus Ueda107
AAD09439.3 endoxylanase Cellvibrio mixtus
AGS42204.1 GH10 family xylanase uncultured bacterium
AAW55667.1 xylanase uncultured organism
ADK78237.1 family 10 xylanase uncultured bacterium
ABD81893.1 putative xylanase Saccharophagus degradans 2-40
AAY98787.1 xylanase Flavobacterium sp. MSY2
ACN87363.1 glycosyl hydrolase family 10 xylanase precursor Flavobacterium sp. LW53
ACN76857.1 family 10 endo-beta-xylanase Paraglaciecola mesophila KMM 241
AFN75725.1 family 10 endo-beta-xylanase Melioribacter roseus P3M-2
AAM39084.1 endo-14-beta-xylanase A Xanthomonas citri pv. citri str.306
NP 644548.1 endo-14-beta-xylanase A Xanthomonas axonopodis pv. citri str. 306
ADN44274.1 xylanase uncultured bacterium
AAB08023.1 xylanase precursor Bacteroides ovatus
ACA34972.1 xylanase I Bacteroides ovatus
CBH32823.1 xylanase Bacteroides xylanisolvens XB1A
BAD80892.1 beta-14-xylanase uncultured bacterium
ADZ76537.1 xylanase uncultured organism
AGL51117.1 GH10 family xylanase Sphingobacterium sp. HP455
ACR61562.1 endo-14-beta-xylanase precursor Sphingobacterium sp. TN19
ACX30652.1 endo-14-beta-xylanase precursor Sphingobacterium sp. TN19
CCO21212.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21269.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21106.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21204.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21040.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21317.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21151.1 glycoside hydrolase family 10 protein termite gut metagenome
CCO21287.1 glycoside hydrolase family 10 protein termite gut metagenome
AAA23059.1 xylanase/beta-xylosidase (XynA) precursor Caldicellulosiruptor saccharolyticus
ABP67985.1 Endo-14-beta-xylanase Caldicellulosiruptor saccharolyticus DSM 8903
AAB87374.1 xylanase Caldicellulosiruptor saccharolyticus
ACM59337.1 Endo-14-beta-xylanase Caldicellulosiruptor bescii DSM 6725
ADQ03732.1 Endo-14-beta-xylanase Caldicellulosiruptor owensensis OL
AEV59741.1 putative xylanase uncultured bacterium
CAA86406.1 xylanase Thermotoga maritima MSB8
AAD35155.1 endo-14-beta-xylanase A Thermotoga maritima MSB8
NP 227877.1 endo-14-beta-xylanase A Thermotoga maritima MSB8
AKE27869.1 14-beta-xylanase Thermotoga maritima MSB8
AGL48984.1 Endo-14-beta-xylanase A precursor Thermotoga maritima MSB8
AHD18169.1 endo-14-beta-xylanase Thermotoga maritima MSB8
CAA87069.1 xylanase Thermotoga neapolitana
ACM22808.1 Endo-14-beta-xylanase A precursor Thermotoga neapolitana DSM 4359
AAD32593.1 family 10 xylanase XynB Thermotoga sp. strain FjSS3-B.1
AAD32593.2 family 10 xylanase XynB Thermotoga sp. strain FjSS3-B.1
AAD32594.1 family 10 xylanase XynC Thermotoga sp. strain FjSS3-B.1
AEH51685.1 Endo-14-beta-xylanase Pseudothermotoga thermarum DSM 5069
AEH51686.1 Endo-14-beta-xylanase Pseudothermotoga thermarum DSM 5069
AAB95325.1 family 10 xylanase Caldicellulosiruptor sp. Rt69B.1
ADQ45302.1 Endo-14-beta-xylanase Caldicellulosiruptor kronotskyensis 2002
ACK42987.1Endo-14-beta-xylanase Dictyoglomus turgidum DSM 6724
AAB42044.1 xynA Caldicellulosiruptor sp. Rt8B.4
AFO70073.1 XynB Caldicellulosiruptor sp. F32
CAA93627.1 endo-14-beta-xylanase Caldicellulosiruptor besciiDSM 6725
ACM59742.1 Endo-14-beta-xylanase Caldicellulosiruptor bescii DSM 6725
CAA31936.1 celB polypeptide precursor Caldicellulosiruptor saccharolyticus
ABP66692.1Cellulose 14-beta-cellobiosidase Caldicellulosiruptor saccharolyticus DSM 8903
ACM60945.1 glycoside hydrolase family 48 Caldicellulosiruptor bescii DSM 6725
AAB95326.1 family 10 xylanase Caldicellulosiruptor sp. Rt69B.1
AAD30363.1 XynA Caldicellulosiruptor sp. Tok7B.1
ACM59335.1 Cellulose 14-beta-cellobiosidase Caldicellulosiruptor bescii DSM 6725
AAB87372.1 xylanase Caldicellulosiruptor saccharolyticus
ABP67987.1 Cellulose 14-beta-cellobiosidase Caldicellulosiruptor saccharolyticus DSM 8903
AAA96979.1 beta-14-xylanase
ACK42920.1 Endo-14-beta-xylanase Dictyoglomus turgidum DSM 6724
AAL06078.1 beta-14-xylanase uncultured bacterium
AAF61649.1 beta-14-xylanase XynA precursor Caldibacillus cellulovorans
AAC43719.1 endoxylanase precursor Thermoanaerobacterium sp.
AAB08046.1 XynA precursor Thermoanaerobacterium thermosulfurigenes
AFK86466.1 glycoside hydrolase family 10 Thermoanaerobacterium saccharolyticum JW/SL-YS485
AKP07634.1 xylanase precursor Thermoanaerobacterium aotearoense
ADL68522.1 Cellulose 14-beta-cellobiosidase Thermoanaerobacterium thermosaccharolyticum DSM 571
YP 003851606.1 cellulose 14-beta-cellobiosidase Thermoanaerobacterium thermosaccharolyticum DSM 571
AAA23227.1 xylanase Hungateiclostridium thermocellum
AAA21812.1 endoxylanase Thermoanaerobacterium saccharolyticum DSM 7060
ADB23440.1 XynA Thermoanaerobacterium saccharolyticum
AFQ62797.1 Xyn10A Caldanaerobius polysaccharolyticus
BAA34091.1 110kDa xylanase (XynE) Aeromonas caviae
CAA90745.1 endoxylanase Cellulomonas fimi
AAD54768.1 endo-14-beta-xylanase Xylanimicrobium pachnodae
BAA02069.1 thermostable celloxylanase Thermoclostridium stercorarium
CAD48313.1 endoxylanase XynB Thermoclostridium stercorarium
AEV40859.1 Xyn7C partial Paenibacillus sp. enrichment culture clone 12-11
AIE12545.1 endo-xylanase Paenibacillus sp. DG-22
ADX97440.1 xylanase KRICT PX3 Paenibacillus terrae HPL-003
AET57943.1 endo-14-beta-xylanase Paenibacillus terrae HPL-003
AAB70918.1 alkaline thermostable endoxylanase Bacillus sp. NG-27
AIX48023.1 XynSL4 Planococcus sp. SL4
BAA00055.1 xylanase A Bacillus sp.
AAQ83581.1 xylanase 10A Bacillus firmus
AAN03480.1 endo-14-beta-xylanohydrolase Bacillus halodurans
AAV98623.1 alkaline active endoxylanase precursor Bacillus halodurans
BAB05839.1 alkaline xylanase A (14-beta-D-xylan xylanohydrolase) Bacillus halodurans C-125
ARX70570.1 xylanase 10AY partial synthetic construct
NP 242986.1 alkaline xylanase Bacillus halodurans C-125
AGH25543.1 thermo-alkalistable xylanase Bacillus halodurans
ADI24221.1 xylanase Bacillus sp. N16-5
AHN13642.1 xylanase uncultured microorganism
CAA82319.1 xylanase T-6 Geobacillus stearothermophilus
ABI49951.1 extracellular xylanase XT6 precursor Geobacillus stearothermophilus
ACH43142.1 xylanase Geobacillus sp. WBI
AEW07375.1 xylanase Geobacillus thermoleovorans
AEO96821.1 thermostable xylanase Geobacillus sp. 71
ACX42569.1 xylanase Geobacillus sp. TC-W7
ACC86109.1 thermostable xylanase Geobacillus thermodenitrificans
AEP39603.1 xylanase Geobacillus thermodenitrificans
ARP42887.1 Endo-14-beta-xylanase A Geobacillus thermodenitrificans
AFU93447.1 endoxylanase Geobacillus thermodenitrificans
APH81401.1 endoxylanase Geobacillus thermodenitrificans
ADN44261.1 xylanase uncultured microorganism
AFJ93348.1 xylanase partial uncultured bacterium
ADX05679.1 putative carbohydrate-active enzyme uncultured organism
AGC54685.2 XynA uncultured organism
ACN78954.1 bifunctional GH 10 xylanase/CE 1 ferulic acid esterase Prevotella ruminicola
ADE83639.1 glycosyl hydrolase family 10/isoamylase domain/esterase family protein Prevotella ruminicola 23
AHF24969.1 endo-14-beta-xylanase uncultured bacterium Contig1753
AHF25484.1 endo-14-beta-xylanase uncultured bacterium Contigcl 7
AHF26135.1 endo-14-beta-xylanase uncultured bacterium Contigcl 1771
CAA84631.1 endo-beta-14-xylanase Bacillus sp.
AAQ99279.1 beta-14-xylanase Bacillus alcalophilus
ADF53358.1 endo-beta-14-xylanase Zunongwangia profunda SM-A87
ACY69980.1 xylanase Alicyclobacillus sp. A4
ACY69981.1 xylanase Alicyclobacillus sp. A15
ABV90486.1 XynA2 Paenibacillus sp. JDR-2
ACS99999.1 Endo-14-beta-xylanase Paenibacillus sp. JDR-2
AEO12683.1 xylanase Paenibacillus xylanilyticus
ADE08352.1 intracellular GH10 xylanase Cohnella laeviribosi
AFE82288.1 endo-14-beta-xylanase Bacillus sp. HJ2
ACY69972.1 endoxylanase Paenibacillussp. E18
AGA16736.1 xylanse Bacillus sp. SN5
CAA76420.1 endo-14-beta-xylanase Thermobacillus xylanilyticus
BAA31551.1 XynX Aeromonas punctata
BAA31551.2 exo-beta-14-xylanase Aeromonas caviae
CAA07174.1 endo-14-beta-xylanase Paenibacillus barcinonensis
ACY69979.1 xylanase Anoxybacillus sp. E2(2009)
AGO43919.1 endoxylanase Anoxybacillus sp. Ip-C
BAA05668.1 endo-14-beta-xylanase Geobacillus stearothermophilus
AGD81833.1 endo-beta-14-xylanase Geobacillus stearothermophilus
ABI49937.2 intra-cellular xylanase ixt6 Geobacillus stearothermophilus
ABI49937.1 intra-cellular xylanase IXT6 Geobacillus stearothermophilus
EPR27574.2 Endo-14-beta-xylanase Geobacillus sp. WSUCF1

Figure S1. Evolutionary relationships between XynSPP2 and 320 amino acid sequences of characterized GH10 xylanases. The analysis Evolutionary analyses were conducted in MEGA7. The phylogenetic tree was constructed using the Neighbor-Joining method. The xylanases are represented by their relevant GenBank accession numbers. The number of times each branch is shown as a percentage. The percentage (shown next to the branches) of replicate trees was supported from 1000 bootstraps.