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[Continued on next page]

(54) Title: FUSION CONSTRUCTS AND USE OF SAME TO PRODUCE ANTIBODIES WITH INCREASED FC RECEPTOR BINDING AFFINITY AND EFFECTOR FUNCTION

ManII-GnTIII:

Bold: ManII localization domain (cytoplasmic tail + transmembrane region + stem region)

ATGAAGTTAAGCCGCCAGTTCACCGTGTTCGGCAGTGCGATCTTCTGTGTGGTGATTTTC
TCGCTCTACCTGATGCTGGACCGGGGTCACTTAGACTACCCCAGGAACCCGCGCCGCGAG
GGCTCCTTCCCTCAGGGCCAGCTCTCAATGTTGCAAGAAAAAATAGACCATTTGGAGCGT
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AAACCAGGTACCAGGATGCTGGAGAAACCTTCTCCAGGGCGGACAGAGGAGAAGACCAAG
GTGGCTGAGGGGTCCTCGGTCCGGGGTCCTGCTCGGAGGCCTATGCGGCATGTGTTGAGT
GCACGGGAGCGCCTGGGAGGCCGGGGCACTAGGCGCAAGTGGGTTGAGTGTGTGTGCCTG
CCAGGCTGGCACGGGCCCAGCTGCGGGGTGCCCACTGTGGTCCAGTATTCCAACCTGCCC
ACCAAGGAGCGCCTGGTACCCAGGGAGGTGCCGAGGCGGGTTATCAACGCCATCAACATC
AACCATGAGTTCGACCTGCTGGATGTGCGCTTCCATGAGCTGGGCGATGTTGTGGACGCC
TTTGTGGTCTGCGAATCCAATTTCACCGCCTACGGGGAGCCTCGGCCGCTCAAGTTCCGA
GAGATGCTGACCAATGGCACCTTCGAGTACATCCGCCACAAGGTGCTCTACGTCTTCCTG
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TTCCTCACCCAGGATGGTGTCTCCCGCCTGCGCAACCTGCGACCTGATGACGTCTTTATC
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GGCTGGACAGAGCCCTTCGCCTTCCATATGCGCAAGTCCCTGTATGGTTTCTTTTGGAAG
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GGGCTGGACGGCATCCGCCTGCGCCGCCGTCAGTACTACACCATGCCCAACTTTCGACAG
TATGAGAACCGCACCGGCCACATCCTAGTGCAGTGGTCTCTCGGCAGCCCCCTGCACTTC
GCGGGCTGGCACTGCTCCTGGTGCTTCACACCCGAGGGCATCTACTTCAAACTCGTGTCG
GCCCAGAATGGTGACTTCCCCCGCTGGGGTGACTACGAGGACAAGAGGGACCTCAATTAC
ATCCGAAGCTTGATTCGCACTGGGGGATGGTTCGACGGCACGCAGCAGGAGTACCCTCCT
GCAGACCCCAGTGAACACATGTATGCTCCTAAGTACCTGCTCAAGAACTATGACCAGTTC
CGCTACTTGCTCGAAAATCCCTACCGGGAGCCCAAGAGCACTGTAGAGGGTGGGCGCCGG
AACCAGGGCTCAGACGGAAGGTCATCTGCTGTCAGGGGCAAGTTGGATACAACGGAGGGC
CCGGAACAGAAACTGATCTCTGAAGAGGACCTGTAG

MKLSRQFTVFGSAIFCVVIFSLYLMLDRGHLDYPRNPRREGSFPQGQLSMLQEKIDHLER
LLAENNEIISNIRDSVINLSESVEDGPKSSQSNFSQGAGSPLLQPLSPSKATEELHRVDF
VLPEDTTEYFVRTKAGGVCFKPGTRMLEKPSPGRTEEKTKVAEGSSVRGPARRPMRHVLS
ARERLGGRGTRRKNVECVCLPGWHGPSCGVPTVVQYSNLPTKERLVPREVPRRVINAINI
NHEFDLLDVRFHELGDVVDAFVVCESNFTAYGEPRPLKFREMLTNGTFEYIRHKVLYVFL
DHFPPGGRQDGWIADDYLRTFLTQDGVSRLRNLRPDDVFIIDDADEIPARDGVLFLKLYD
GWTEPFAFHMRKSLYGFFWKQPGTLEVVSGCTIDMLQAVYGLDGIRLRRRQYYTMPNFRQ
YENRTGHILVQWSLGSPLHFAGWHCSWCFTPEGIYFKLVSAQNGDFPRWGDYEDKRDLNY
IRSLIRTGGWFDGTQQEYPPADPSEHMYAPKYLLKNYDQFRYLLENPYREPKSTVEGGRR
NQGSDGRSSAVRGKLDTTEGPEQKLISEEDL

(57) Abstract: The present invention relates to the field of glycosylation engineering of proteins. More particularly, the present invention relates to nucleic acid molecules, including fusion constructs, having catalytic activity and the use of same in glycosylation engineering of host cells to generate polypeptides with improved therapeutic properties, including antibodies with increased Fc receptor binding and increased effector function.

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