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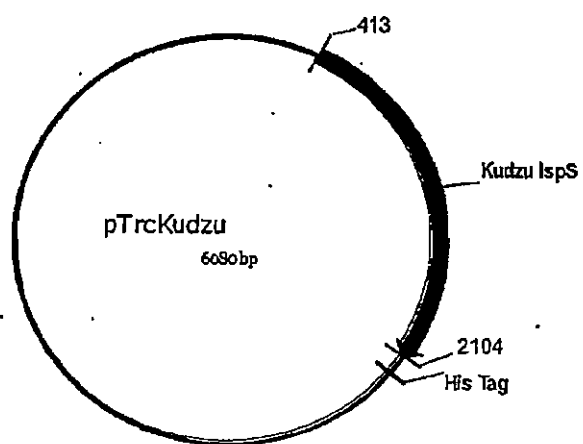
Figure 2

Figure 3A

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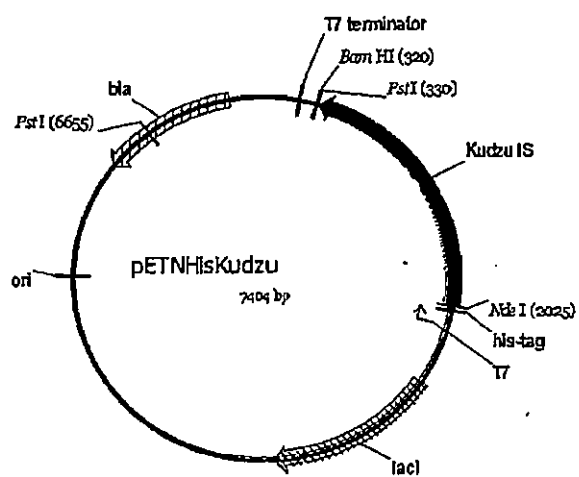
Figure 3B

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Figure 3C

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Figure 4



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Figure 5A

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Figure 5C

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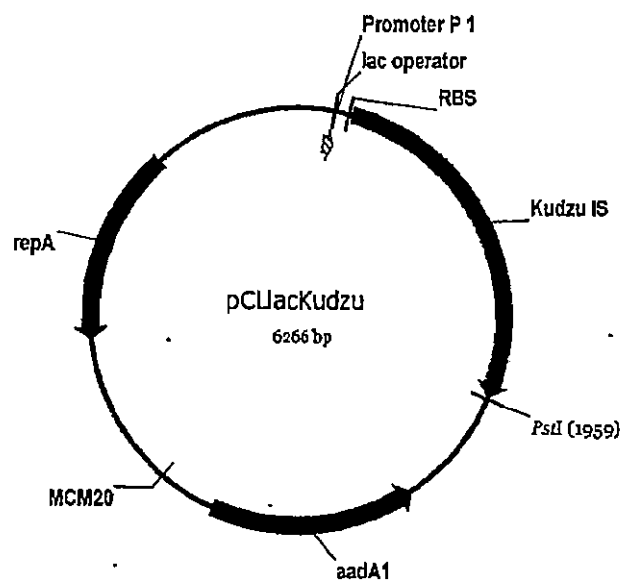
Figure 6

Figure 7A

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Figure 7B

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Figure 7C

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Figure 8A

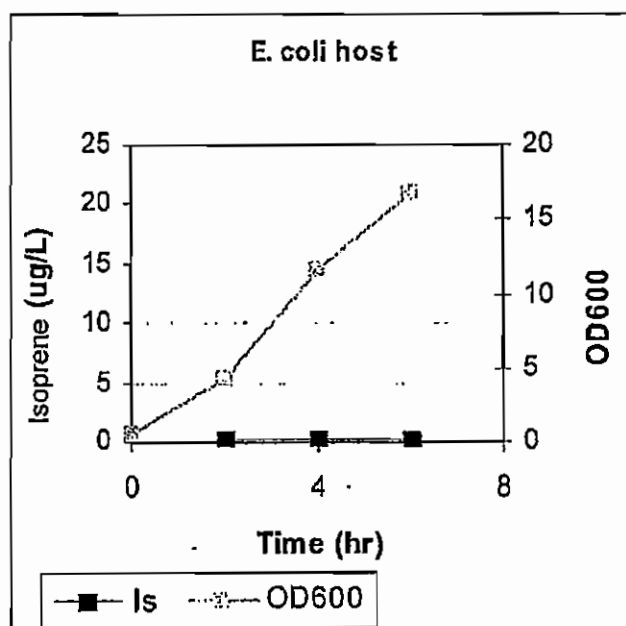
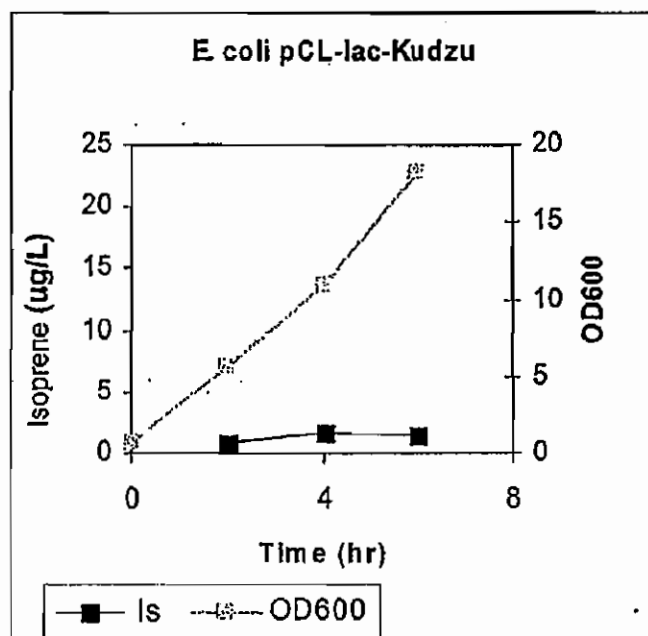
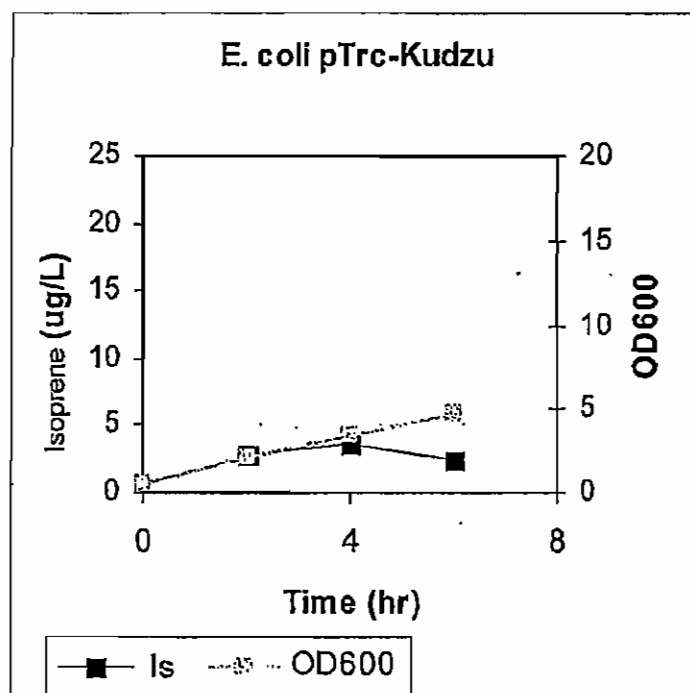


Figure 8B



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Figure 8C



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Figure 8D

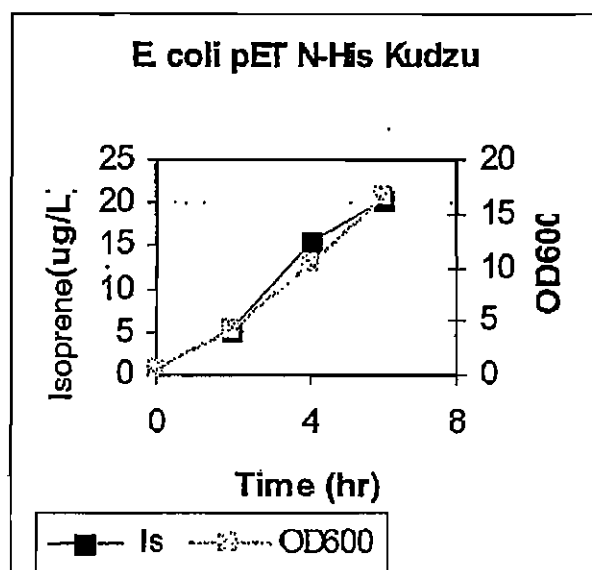
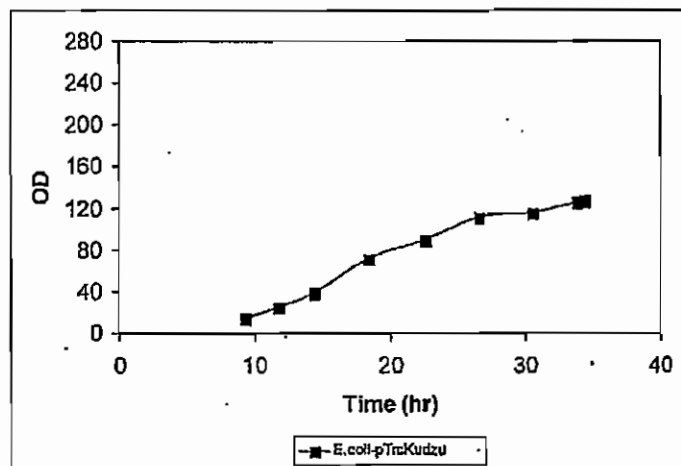
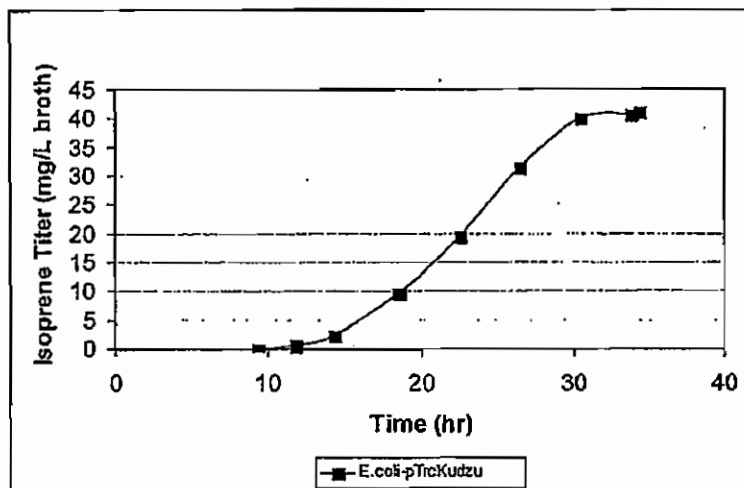


Figure 9

A.

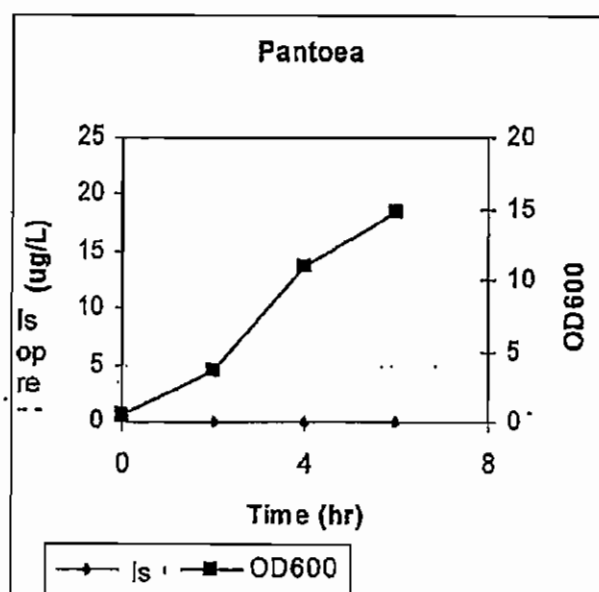


B.



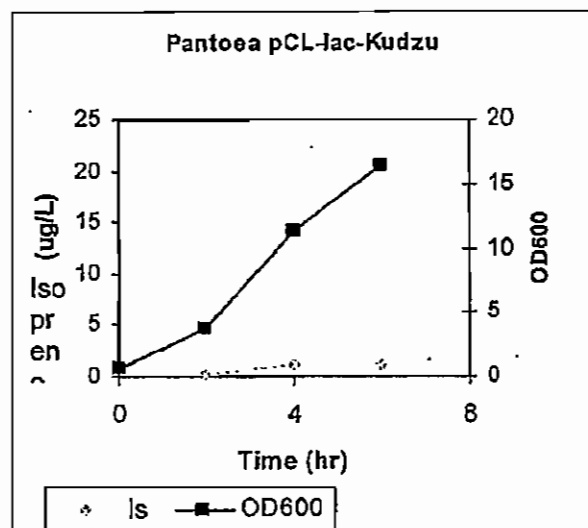
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Figure 10A



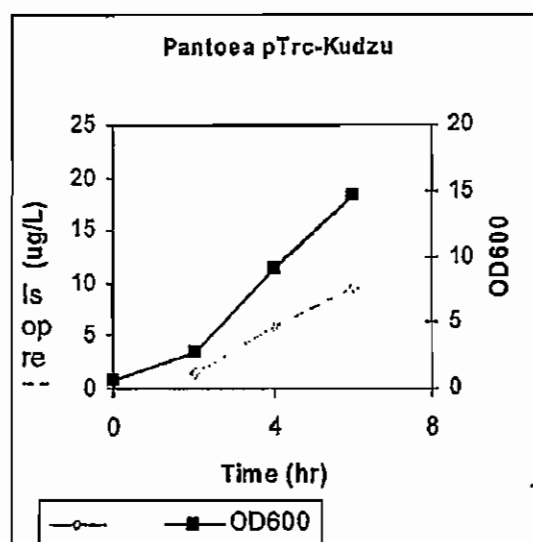
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Figure 10B



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Figure 10C



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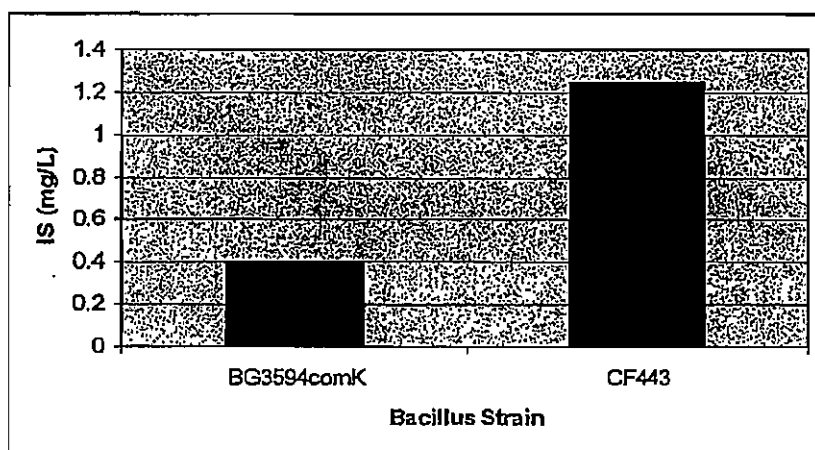
Figure 11

Figure 12A

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Figure 12B

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a a c a t a a a t a t a t a t t t t a a a a t a t c c c a c t t t a t c c a a t t t t c g t t t g t t g a a c t a a t g g g t
g c t t t a g t t g a a g a t a a a g a c c a c a t t a a a a a t g t g g t c t t t t g t g t t t t t t a a a g g a t t t
g a g c g t a c g c g a a a a t c c t t t t c t t t c t t a t c t t g a t a a t a a g g g t a a c t a t t g c c g g t
t g t c c a t t c a t g g c t g a a c t c t g c t t c c t c t g t t g a c a t g a c a c a c a t c a t c t c a a t a t c g g a
t a g g g c c c a t c a g t c t g a c g a c c a a g a g a g c c a t a a a c a c c a a t a g c c t a a c a t c a t c c c c a t
a t t t a t c c a a t a t t c g t t c c t t a a t t t c a t g a a c a a t c t t c a t t c t t t c t t c t a g t c a t t a t
t a t t g g t c c a t t c a c t a t t c t c a t t c c c t t t c a g a t a a t t t a g a t t t g c t t t t c t a a a t a a g
a a t a t t t g g a g a g c a c c g t t c t t a t t c a g c t a t t a a a a c t c g t c t t c c t a a g c a t c c t t c a a t
c c t t t t a a t a a c a a t t a t a g c a t c t a a t c t t c a a c a a a c t g g c c g t t t g t t g a a c t a c t c t t t
a a t a a a a t a a t t t t t c c g t t c c c a a t t c c a c a t t g c a a t a a t a g a a a t c c a t c t t c a t c g g c t
t t t t c g t c a t c a t c t g t a t g a a t c a a a t c g c c t t c t t c t g t g t c a t c a a g g t t t a a t t t t t a t
g t a t t t c t t t t a a c a a a c c a c c a t a g g a g a t t a a c c t t t a c g g t g t a a c c t t c c t c c a a a t c
a g a c a a c g t t t c a a a t t c t t t t c t t c a t c a t c g g t c a t a a a a t c c g t a t c c t t t a c a g g a t a t
t t t g c a g t t t c g t c a a t t g c c g a t t g t a t a t c c g a t t t a t t t t t t t c g g t c g a a t c a t t t
g a a c t t t t a c a t t t g g a t c a t a g t c t a a t t t c a t t g c c t t t t c c a a a a t t g a a t c c a t t g t t t

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Figure 12C

ttgattcacgtagttttctgttattctaaaataagttgggtccacacataccattacatgcatg
tgctgattataagaattatctttattattttattgtcacatocgttgacgcataaaaccaacaa
gatttttattaattttttttatattgcatcattcggcgaaatccttgagccatatctgtcaaact
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gttggcttttgtttaataacttcagcaacaaccttttgtgactgaatgccatgtttcattgctc
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gcctgtttcacgattttgtttatactctaataatttcagcacaatcttttactctttcagccttt
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gtctcacttttccactttttgtcttgtccactaaaacccttgatttttcatctgaataaatgct
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aactttaacagatgggggtttttctgtgcaaccaattttaagggttttcaatactttaaaacaca
tacataccaacacttcaacgcacctttcagcaactaaaataaaaatgacgttatttctatatgt
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(SEQ ID NO:57)

Figure 13

ATGTGTGCAACCTCCTCCCAGTTTACTCAGATTACCGAGCATAATTCTCGACGATCTGCTAACT
ACCAGCCGAACCTTTGGAACCTTTGAGTTTCTCCAGTCTCTCGAAAATGACCTGAAGGTGGAAAA
GCTCGAGGAGAAGGCGACCAAACTCGAGGAGGAGGTGCGATGTATGATCAACAGAGTTGACACC
CAACCCCTGTCTTTGCTGGAGCTGATCGACGATGTGCAGCGGTTGGGTTTGACTTATAAATTCTG
AGAAGGACATTATCAAGGCACTGGAGAACATTGTGCTCCTCGACGAGAACAAGAACAAGTC
TGATCTTCACGCTACCGCTCTCTCTTTCCGACTTCTTCGACAACACGGCTTCGAGGTGTCGCAG
GACGTCTTCGAGAGATTTAAGGACAAGGAGGGAGGATTTAGCGGCGAGCTGAAGGGAGACGTTT
AGGGTCTTCTCTCCTTGTACGAGGCGTCTACCTGGGATTTCGAGGGAGAGAACCCTCCTGGAGGA
AGCTCGTACATTTTCCATCACTCACCTTAAGAATAACCTTAAGGAGGGGAATTAACACCAAGGTG
GCCGAGCAGGTTTCTACGCCCTGGAGCTCCCCTACCACCAACGGCTCCATAGACTGGAGGCTC
GTTGGTTCCCTGGACAAATATGAGCCAAAGGAGCCTCATCATCAGTTGCTGTTGGAGTTGGCCAA
GCTGGACTTCAATATGGTTTCAGACGCTGCACCAAAGGAGTTCAGGACCTGTCTCGATGGTGG
ACCGAGATGGGATTGGCCTCGAAGCTGGATTTTGTCCGTGACCGACTTATGGAGGTCTATTTTT
GGGCCCTTGGAAATGGCGCCTGACCCCCAGTTCCGAGAGTGCCGGAAGGCGGTGACGAAGATGTT
CGGTCTTGTGACTATCATCGACGACGTCTACGATGTCTACGGCACACTCGACGAGTTGCAGCTG
TTCACTGACGCCGTGAGCGATGGGATGTGAACGCCATTAATACTCTCCCTGACTATATGAAGC
TGTGCTTCCCTGGCTCTGTACAACACTGTCAACGATACCTCGTACTCTATCCTCAAGGAGAAGGG
ACACAACAATCTCTCCTACTTGACCAAATCCTGGCGAGAAGTGTGCAAGGCTTTTCTGCAGGAG
GCTAAATGGTCCAAATAACAAGATCATTCCTGCTTTTTCTAAATACCTGGAAAATGCCTCGGTGT
CGAGCTCTGGCGTCGCCCTTCTGGCCCCCTTCTACTTCTCCGTCTGCCAGCAGCAGGAGGATAT
TTCCGATCATGCTCTTAGATCGCTGACCGATTTTACGGCCTCGTGCGATCTTCTGCGTGATT
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CCATTATTTCTTACATGCACGAAAACGATGGAACATCTGAAGAACAGGCTAGAGAGGAACTGCG
AAAGTTGATCGACGCCGAGTGGAAGAAGATGAACAGAGAGCGGGTGTCCGACTCTACCCTGCTT
CCCAAGGCCCTTCATGGAGATCGCCGTGAACATGGCTCGAGTTTCCCATGTACTTACCAGTACG
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CTTCCCTATCAACCAATTGATGTACGTGTAA
(SEQ ID NO:8)

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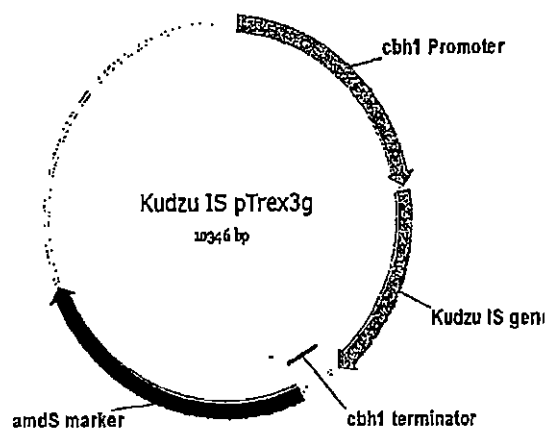
Figure 14

Figure 15A

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1   TCGACCGGTG AGAAGAACAG CATCGGGACA AGGGAAGGAA GAACAAAGAC AAAGAAAACA
61  AAAGAAAGCA ATGAAAACAA AACAAAACA ATTTTCATTC CTCTCTTAT CATTCCCTTT
121 CTTTTCTTTT CTCTCATTC ACGCACTCCA TCGTATCCGT ATTCCTCTTA TTTTCTCTCT
181 TTCTCTATAT CCATTTCTTT CTCTCTAGGT GTGTCTCTC TCTCTCTTCA ATTTCTCTAC
241 TCCGCTATCC AACGCATCCT TCCCCAACCC TCCCATTTCC TCCTTACGGC CCGATAGCGA
301 TCGTCTTTCC CTGCTATCA CTGCTACCG GCCCTCTCTC TGCACCGTAA CCTCTACGT
361 ATTTACCATA TCATAAAGTT TTTTCCGACG CTATCGCTG ACCCCCTGTC GCCCTCCTAT
421 TGGCTTCCGG ATTATCTTCT TGTCCATAAG GTGATCCATG CTCTCTGAG ATTCCTGAAA
481 TGTGTCCACT TTGGCGGGGA ATCATTCCAT CCACITCTTT CTCTCTCGCT TTCCTCATTC
541 GCGCTCCCC TTCCGCTCT CATTTGGTCTT CCGCTCCGTT TTTGCTTTCG CGATGTTACT
601 TGGGAGAGGG TCGATAATC CTTTCGCAAA AACTCGGTTT GACGCTCCG ATGTTATAAA
661 TAGTGGGTGG TGGACAGGTG CCTTCGCTTT TCTTTAAGCA AGAGAATCCC ATTGTCTTGA
721 CTATACGAA TTACATACA TTATGAAGAT CACCGCTGTC ATTGCCCTTT TATTCTCACT
781 TGTGCTGCC TCACCTATTC CAGTTGCCG TCTTGGTGTG GTTTCAGTTA GCAAGTCATA
841 TCGTGATTTT CTCTGCTTT ACCAAGTTG GAACACTTTT GCTAATCTG ATAGACCCAA
901 CCTTAAGAG AGAATGATA CACCTGCAAG TGGATATCAA GTTGAAGAA TCGTAATTTT
961 GTCACGTCAC GGTGTAGGG CCCCTACAAA AATGACTCAA ACCATGCGTG ATGTCACCTC
1021 TAATACATGG CCAGATGGC CCGTTAAAT AGGATATATT ACACCAAGAG GTGAACACTT
1081 GATATCACTT ATGGGCGGTT TTTACCGTCA AAAATTCAG CAACAAGGAA TCCTTTCTCA
1141 GGGCTCCTGT CTACTCTTA ACTCCATATA TGTCTGGGCT GACGCTGATC AGCGTACTTT
1201 AAAAAGTGGT GAAGCATTC TTGCTGGTTT GGCACCACAA TGTGGCTTGA CAATTCATCA
1261 CCAACAAAT CTGAGAAAG CTGATCTCT TTTTCATCCC GTTAAAGCTG GAACCTGCTC
1321 TATGGATAAA ACTCAAGTTC AACAGCTGT TGAGAAGGAG GCACAACTC CTATAGATAA
1381 TTTGAATCAA CATTACATCC CCTTTTAGC TTTAATGAAT ACAACATTA ATTTTAGTAC
1441 TTCTGCTGG TGCACAAAAC ACTCTGCTGA TAAATCCTGT GACCTAGGTT TATCCATGCC
1501 TTCTAAATG TCCATAAAG ATAATGGTAA CAAGGTCGCA TTGGATGGAG CTATTEGTTCT
1561 ATCCTCTACT TTGGCCGAGA TTTTCTTCT TGAATATGCT CAAGGCATGC CTCAGCTGC
1621 TTGGGGTAAC ATCCACTCAG AGCAAGAGTG GGCTTCCTTG CTAAAGTTGC ATAATGTTCA
1681 ATTCGATTTG ATGGCCCGAA CACCTTATAT TGCTCGACAT AACGGTACTC CTTTATTGCA
1741 AGCTATATCA AATGCCCTTA ATCCCAACGC CACTGAATCA AACTTCCAG ATATTTCAAC
1801 TGATAACAAA ATATTGTTCA TTGCAGTCA TGACACAAAT ATTGCTAATA TAGCCGGCAT
1861 GTTAATATG CGTTGACAT TACCAGGTCA ACCAGATAAT ACTCCTCCAG GTGGTGCCCT
1921 AGTATTTGAA CGTCTGCTG ATAAAGTGG AAAACAATAT GTTCTGTAT CTATGGTTTA
1981 TCAAAACATA GAACAACTTC GATCACAGAC TCCCCTTTCT CTAAATCAGC CTGCGGATC
2041 TGTTCACCTT AAAATTCAG GTTGCAATGA TCAACAGCC GAGGGTACT GTCTCTTTTC
2101 CACTTTTACA AGAGTGTGT CCCAATCTGT TGAACCTGGA TGCCAACTTC AATATGAGG
2161 ATCCAGTAA GGGATGAGA ATGTGATCCA CTTTAAATC CTAAATGAATA CATGCCTATA
2221 GTTCTTTTCT TTGTCTTTT ATGTCTTTT TCGATGGTAC GGCCGTGTC AATCTCAGTT
2281 TGTGTGCTTG GTTGACGCTT GGTTCAAAT CTGTTCATCT CATGAATCTT TTACCATTTT
2341 ACCACACGTT TATACCATTC TCTCATAGAA TCTTCATCAA ACCATCTCGG GGTTAGAGTG
2401 GAAAGAAAGT CTGTCTTTT TATTTCTTT TTTCCATCTT CAAGGCTTTT CTTTCTTCC
2461 TCCTCCTCGT TCATCTTGAG GTTTGACGTG TCTGTTTGA ATTTTGAGCT GTTGACGAT
2521 CTTATTTTTT GTTTTGGGAA AACGAAGCGC TTTACTCTCT TCATCAGTTG GACGATTGTA
2581 CCTTTGAAA CCAACTACTT TTGCATGTTT TGTATAGAAA TCAATGATAT TAGAATCCCA
2641 TCCTTTAATT TCTTTCAAG TAGTTAGCT ATAGTTAAGT GTAAGGGCCC TACTGCGAAA
2701 GCATTTGCCA AGGATGTTTT CATTAATCAA GAACGAAGT TAGGGGATCG AAGACGATCA
2761 GATACCGTCG TAGTCTTAAC CATAACTAT GCCGACTAGG GATCGGGCAA TGTTCATTT
2821 ATCGACTTGC TCGGCACCTT ACGAGAAATC AAGTCTTTG GGTTCGGGG GAGTATGGT
2881 CGCAGGCTG AACTTAAG GAATTGACG AAGGGCACCA CAATGGAGTG GAGCTGCGG
2941 CTTAATTTGA CTCACACGG GGAACCTCAC CAGGTCCAGA CATAGTAAG ATTGACAGAT
3001 TGAGAGCTCT TTCCTGATTC TATGGGTGGT GGTGCATGGC CGTTCTTAGT TGGTGGAGTG
3061 ATTTGTCTGC TTAATTGCGA TAACGAACGA GACCTTAACC TGCTAAATAG CTGGATCAGC
3121 CATTTTGGCT GATCATTAGC TTCTTAGAGG GACTATTGGC ATAAAGCCAA TGGAAAGTTG
3181 AGGCAATAAC AGGTCTGTGA TGCCCTTAGA TGTCTGGGC CGCACGCGC CTACACTGAC
3241 GGAGCCAACG AGTTGAAAAA AATCTTTTGA TTTTATATCC TTGGCCGGAA GGTCTGGGTA
3301 ATCTTGTAA ACTCCGTCGT GCTGGGGATA GAGCATTGCA ATTATTGCGG CCGCTCCTCA
3361 ATTCGATGTT GCAGATTTTA CAAGTTTTTA AAATGTATTT CATTATTAAT TTTTATATGC
3421 CTAAATAAAA AGCCATAGTT TAATCTATAG ATAACTTTTT TCCAGTGCA CTAAACGAGC

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Figure 15B

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3481 TTACATCCCC ATACAAAAC TCGTAGTTAA AGCTAAGGAA AAGTTAATAT CATGTTAATT
3541 AAATACGCTA TTTACAATA GACATTGAAC TCATTATAT CGTTGAATAT GAATAACCAA
3601 TTTACGCGAA TTTTAAACA ACATCGTTCA CCTCGTTTAA GGATATCTTG TGTATGGGGT
3661 GTTGACTTGC TTTATCGAAT AATTACCGTA CCTGTAATG GCTTGCTGGA TATAGCGGTA
3721 GTCTAATATC TAGCAAAAAT CTTTGGGTTG AAAAGGCTTG CAATTTACAG ACACCGAACT
3781 ATTTGTCAAT TTTAATAAG GAAGTTTCC ATAAATTCCT GTAATTCTCG GTTGATCTAA
3841 TTGAAAAGAG TAGTTTGTGA TCACGATGAG GAGGGCTTTT GTAGAAAGAA ATACGAACGA
3901 AACGAAAATC AGCGTTGCCA TCGCTTTGGA CAAAGCTCCC TTACCTGAAG AGTCGAATTT
3961 TATTGATGAA CTATTAACCT CCAAGCATGC AAACCAAAAG GGAGAACAAG TAATCCAAGT
4021 AGACACGGGA ATTGGATTCT TGGATCACAT GTATCATGCA CTGGCTAAAC ATGCAGGCTG
4081 GAGCTTACGA CTTTACTCAA GAGGTGATT AATCATCGAT GATCATCACA CTGCAGAAGA
4141 TACTGCTATT GCACTTGGTA TTGCATTCAA GCAGGCTATG GGTAACCTTG CCGGCGTTAA
4201 AAGATTTTGA CATGCTTATT GTCCACTTGA CGAAGCTCTT TCTAGAACGG TAGTTGACTT
4261 GTCGGGACGG CCCTATGCTG TTATCGATT GGGATTAAAG CGTGAAAAGG TTGGGGAAAT
4321 GTCCCTGTGA ATGATCCCTC ACTTACTATA TTCCTTTTCG GTAGCAGCTG GAATTAATTT
4381 GCATGTTACC TGCTTATATG GTAGTAATGA CCATCATCGT GCTGAAAAGC CTTTTAAATC
4441 TCTGGCTGTT GCCATCGCGG CGGCTACTAG TCTTACTGGA AGTTCTGAAG TCCCAGGCAC
4501 GAAGGGAGTG TTGTAAGAT GAATTGGATT ATGTCAGGAA AAGAAGCACA ATTTTGCATC
4561 CAATTTGTCT AAATTTTAGA GTTGCTTGAA AACAAAGAA CCTTACTTGC TTTATAATTA
4621 CGTTAATTAG AAGCGTTATC TCGTGAAGGA ATATAGTACG TAGCCGTATA AATTGAATTG
4681 AATGTTACGC TTATAGAATA GAGACACTTT GCTGTTCAAT GCGTCGTCAC TTACCATACT
4741 CACTTTATTA TACGACTTTA AGTATAAAT CCGCGGTAT GGTAAATTA ATGATGCACA
4801 AACGTCCGAT TCCATATGGG TACACTACAA TTAATACTT TTAAGCTGAT CCCCCACACA
4861 CCATAGCTTC AAAATGTTTC TACTCCTTTT TTACTCTTCC AGATTTTCTC GGACTCCGGG
4921 CATCGCCGTA CCACTTCAAA ACACCAAGC ACAGCATACT AAATTTTCCC TCTTCTTCC
4981 TCTAGGGTGT CGTTAATTAC CCGTACTAAA GGTTTGGAAA AGAAAAAAGA GACCGCCTCG
5041 TTTCTTTTTC TTCTGCGAAA AAGGCAATAA AAATTTTAT CACGTTTCTT TTTCTTGAAA
5101 TTTTTTTTTT TAGTTTTTTT CTCTTTCAGT GACCTCCATT GATATTTAAG TTAATAAACG
5161 GTCTTCAAT TCTCAAGTTT CAGTTTCATT TTTCTTGTTT TA'TACAACT TTTTACTT
5221 CTGTTCATT AGAAAGAAAG CATAGCAATC TAATCTAAGG GCGGTGTTGA CAATTAATCA
5281 TCGGCATAGT ATATCGGCAT AGTATAATAC GACAAGGTGA GGAACTAAC CATGGCCAAAG
5341 TTGACCAAGT CCGTTCCGGT GCTCACCAGG CCGGACGTCG CCGGAGCGGT CGAGTTCTGG
5401 ACCGACCGGC TCGGGTTCTC CCGGGACTTC GTGGAGGACG ACTTCGCGCG TGTGGTCCGG
5461 GACGACGTA CCTGTTCAT CAGCGCGGTC CAGGACCAAG TGGTGCCGGA CAACACCCCTG
5521 GCCTGGGGTG GGGTGCGGGG CTTGGACGAG CTGTACGCGG AGTGGTCGGA GGTGCTGTCC
5581 ACCGAATTCG GGGACGCTC CGGGCCGGCC ATGACCGAGA TCGGCGAGCA GCGCTGGGGG
5641 CCGGAGTTTC CCTGCGCGA CCGGGCCGGC AACTGCGTGC ACTTCGTGGC CGAGGAGCAG
5701 GACTGACACG TCCGACGGCG GCCACGGGT CCCAGGCTC GGAGATCCGT CCCCCTTTTC
5761 CTTTGTGAT ATCATGTAAT TAGTTATGTC ACGCTTACAT TCACGCCCTC CCCCCACATC
5821 CGCTCTAACC GAAAAGGAAG GAGTTAGACA ACCTGAAGTC TAGGTCCCTA TTTATTTTTT
5881 TATAGTTATG TTAGTATTAA GAACGTTATT TATATTTCAA ATTTTCTTT TTTTCTGTA
5941 GTCACGCGAG CTTCACGTA AATGTGCCAT CTCGTAGGCA GAAAACGTT CCCCCTAGG
6001 GTCTCTCTCT TGGCCTCCTT TCTAGGTCGG GCTGATTGCT CTGAAGCTC TCTAGGGGGG
6061 CTCACACCAT AGGCAGATAA CGTTCCCCAC CGGCTCGCCT CGTAAGGCA CAAGGACTGC
6121 TCCCAAAGAT CTTAGGCGGG ATTTTGCCGA TTTCCGCCTA AAGGAACCGG AACACGTAGA
6181 AAGCCAGTCC GCAGAAACGG TGCTGACCCC GGATGAATGT CAGCTACTGG GCTATCTGGA
6241 CAAGGGAAAA CGCAAGCGCA AAGAGAAAGC AGGTAGCTTG CAGTGGGCTT ACATGGCGAT
6301 AGCTAGACTG GCGGTTTTTA TGGACAGCAA GCGAACCAGA ATTGCCAGCT GGGGCGCCCT
6361 CTGTAAGGT TGGGAAGCCC TGCAAGTAA ACTGGATGGC TTTCTTGCG CCAAGGATCT
6421 GATGGCGCGG GGGATCAAGA TCTGATCAAG AGACAGGATG AGGATCGTTT CGCATGATTG
6481 AACAAAGATG ATTGCACGCA GGTTCCTCCG CCGTTGGGT GGAGAGGCTA TTCGGCTATG
6541 ACTGGGCACA ACAGACAATC GGCTGCTCTG ATGCCGCCGT GTTCCGGCTG TCAGGCGAGG
6601 GGCGCCCGGT TCTTTTGTG AAGACCGACC TGTCCGGTGC CTTGAATGAA CTGCAGGACG
6661 AGGCACTGCG GCTATCGTGG CTGGCCACGA CCGGCTTCC TTGCGCAGCT GTGCTCGAGC
6721 TTGTCATGTA AGCGGGAAGG GACTGGCTGC TATTGGGCGA AGTGCCGGGG CAGGATCTCC
6781 TGTCACTCTG CTTTGTCTCT GCCGAGAAAG TATCCATCAT GGCTGATGCA ATGCGGCGGC
6841 TGCAATACGCT TGATCCGGCT ACCTGCCCAT TCGACCACCA AGCGAAACAT CGCATCGAGC
6901 GAGCAGCTAC TCGGATGGAA CCGGCTCTTG TCGATCAGGA TGATCTGGAC GAAGAGCATC
6961 AGGGGCTCGC GCCAGCCGAA CTGTTGCCCA GGCTCAAGGC GCGCATGCCC GACGGCGAGG

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Figure 15C

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7021 ATCTCGTCGT GATCCATGGC GATGCCCTGCT TGCOGAATAT CATGGTGGAA AATGGCCGCT
7081 TTTCTGGATT CAACGACTGT GGCCGGCTGG GTGTGGCGGA CCGCTATCAG GACATAGCGT
7141 TGGATACCCG TGATATTGCT GAAGAGCTTG GCGGCGAATG GGCTGACCGC TTCCTCSTGC
7201 TTTACGGTAT CGCCGCTCCC GATTCGCAGC GCATCGCCTT CTATCGCCTT CTTGACGAGT
7261 TCTTCTGAAT TGAAAAAGGT ACCAAGTTTA CTCATATATA CTTTAGATTG ATTTAAAACT
7321 TCATTTTAA TTTAAAGGA TCTAGSTGAA GATCCTTTT GATAATCTCA TGACCAAAT
7381 CCCTTAACGT GAGTTTTCGT TCCAATGAGC GTCAGACCCC GTAGAAAAGA TCAGAGGATC
7441 TTCTTGAGAT CCTTTTTTTC TGCGCGTAAT CTGCTGCTTG CAAACAAAAA AACCACCGCT
7501 ACCAGCGGTG GTTTGTTTGC CGGATCAAGA GCTACCAACT CTTTTTCCGA AGGTAAGTGG
7561 CTTCAGCAGA GCGCAGATAC CAAATACTGT CCTTCTAGTG TAGCCGTAGT TAGGCCACCA
7621 CTTCAAGAAC TCTGTAGCAC CGCCTACATA CCTCGCTCTG CTAATCCTGT TACCAGTGGC
7681 TGCTGCCAGT GGCGATAAGT CGTGTCTTAC CGGGTTGGAC TCAAGACGAT AGTTACCGGA
7741 TAAGGCGCAG CGGTGCGGCT GAACGGGGGG TTCGTGCACA CAGCCAGCT TGGAGCGAAC
7801 GACCTACACC GAACAGAGT ACCTACAGCG TGAGCATTGA GAAAGCGCCA CGCTTCCGA
7861 AGGGAGAAAG GCGGACAGT ATCCGGTAAG CGGCAGGGTC GGAACAGGAG AGCGCACGAG
7921 GGAGCTTCCA GGGGGAAACG CCTGGTATCT TTATAGTCTT GTCCGGTTTC GCCACCTCTG
7981 ACTTGAGCGT CGATTTTGT GATGCTCGTC AGGGGGGCGG AGCCTATGGA AAAACGCCAG
8041 CAACGCGGCC TTTTACGGT TCCTGGCCTT TTGCTGGCCT TTTGCTCACA TGTTCCTTCC
8101 TGCCTTATCC CCTGATTCTG TGGATAACCG TATTACCGCC TTTGAGTGAG CTGATACCGC
8161 TCGCCGCAGC CGAACGACCG AGCGCAGCGA G
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(SEQ ID NO:11)

Figure 16

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1 GAATTCAAAA CAAATGTGT GCAACCTCCT CCCAGTTTAC TCAGATTACC GAGCATARTT
61 CTCGACGATC TGCTAACTAC CAGCCGAACC TTTGGAACCT TGAGTTTCTC CAGTCTCTCG
121 AAAATGACCT GAAGGTGGAA AAGCTCGAGG AGAAGGCGAC CAAACTCGAG GAGGAGGTGC
181 GATGTATGAT CAACAGAGTT GACACCCAAC CCCTGTCTTT GCTGGAGCTG ATCGACGATG
241 TGCAGCGGTT GGGTTTGACT TATAAATTCTG AGAAGGACAT TATCAAGGCA CTGGAGAACCA
301 TTGTGCTCCT CGACGAGAAC AAGAAGAACCA AGTCTGATCT TCACGCTACC GCTCTCTCTT
361 TCCGACTTCT TCGACACAC GGGTTTCGAGG TGTGCGCAGGA CGTCTTCGAG AGATTTRAAGG
421 ACAAGGAGGG AGGATTTAGC GGCAGAGCTGA AGGGAGACGT TCAGGGTCTT CTCTCCTTGT
481 ACGAGGCGTC CTACCTGGGA TTCGAGGGAG AGAACCTCCT GGAGGAAGCT CGTACATTTT
541 CCATCACTCA CCTTAAGAA AACCTTAAGG AGGGAATTAA CACCAAGGTG GCCGAGCAGG
601 TTTCTCAGCG CCTGGAGCTC CCTACCACC AACGGCTCCA TAGACTGGAG GCTCGTTGGT
661 TCCTGGACAA ATATGAGCCA AAGGAGCCTC ATCATCAGTT GCTGTTGGAG TTGGCCAAGC
721 TGGACTTCAA TATGTTTCAG ACGCTGCACC AAAAGGAGTT GCAGGACCTG TCTCGATGGT
781 GGACCGAGAT GGGATTGGCC TCGAAGCTGG ATTTTGTCCG TGACCGACTT ATGGAGGTCT
841 ATTTTGGGCG CCTTGGAAAT GCGCCTGACC CCCAGTTCCG AGAGTGCCCG AAGGCGGTGA
901 CGAAGATGTT CGGTCTTGTG ACTATCATCG ACGACGTCTA CGATGCTTAC GGCACACTCG
961 ACGAGTTGCA GCTGTTCACT GACGCCGTCG AGCGATGGGA TGTGAACGCC ATTAATACTC
1021 TCCCTGACTA TATGAAGCTG TGCTTCCTGG CTCTGTACAA CACTGTCAAC GATACCTCGT
1081 ACTCTATCCT CAAGGAGAAG GGACACAACA ATCTCTCCTA CTGACCAAA TCCTGGCGAG
1141 AACTGTGCAA GGCTTTTCTG CAGGAGGCTA AATGGTCCAA TAACAAGATC ATTCTGCTT
1201 TTTCTAATAA CCTGGAAAAT GCCTCGGTGT CGAGCTCTGG CGTCCGCCCTT CTGGCCCCCTT
1261 CCTACTTCTC CGTCTGCCAG CAGCAGGAGG ATATTTCCTG TCATGCTCTT AGATCGCTGA
1321 COGATTTTCA CGGCCCTCGT CGATCTTCCT GCGTGATTTT TCGGTTGTGT AATGACCTTG
1381 CGACCTCTGC TGCTGAGCTG GAACGAGGCG AGACTACAAA TTCCATTATT TCTTACATGC
1441 ACGAAAACGA TGGAAATCTT GAAGAACAGG CTAGAGAGGA ACTGCGAAAG TTGATCGACG
1501 CCGAGTGGAA GAAGATGAAC AGAGAGCGGG TGTCGACTC TACCCTGCTT CCCAAGGCCT
1561 TCATGGAGAT CGCCGTGAAC ATGGCTCGAG TTTCCCATIG TACTTACCAG TACGGTGACG
1621 GCCTGGGTCTG TCCGGACTAC GCTACAGAGA ACCGAATCAA GCTGCTGCTC ATCGACCCCT
1681 TCCTATCAA CCAATTGATG TACGTGTAAT AGTCTAGAGG ATCC

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(SEQ ID NO:12)

Figure 17

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Figure 18A

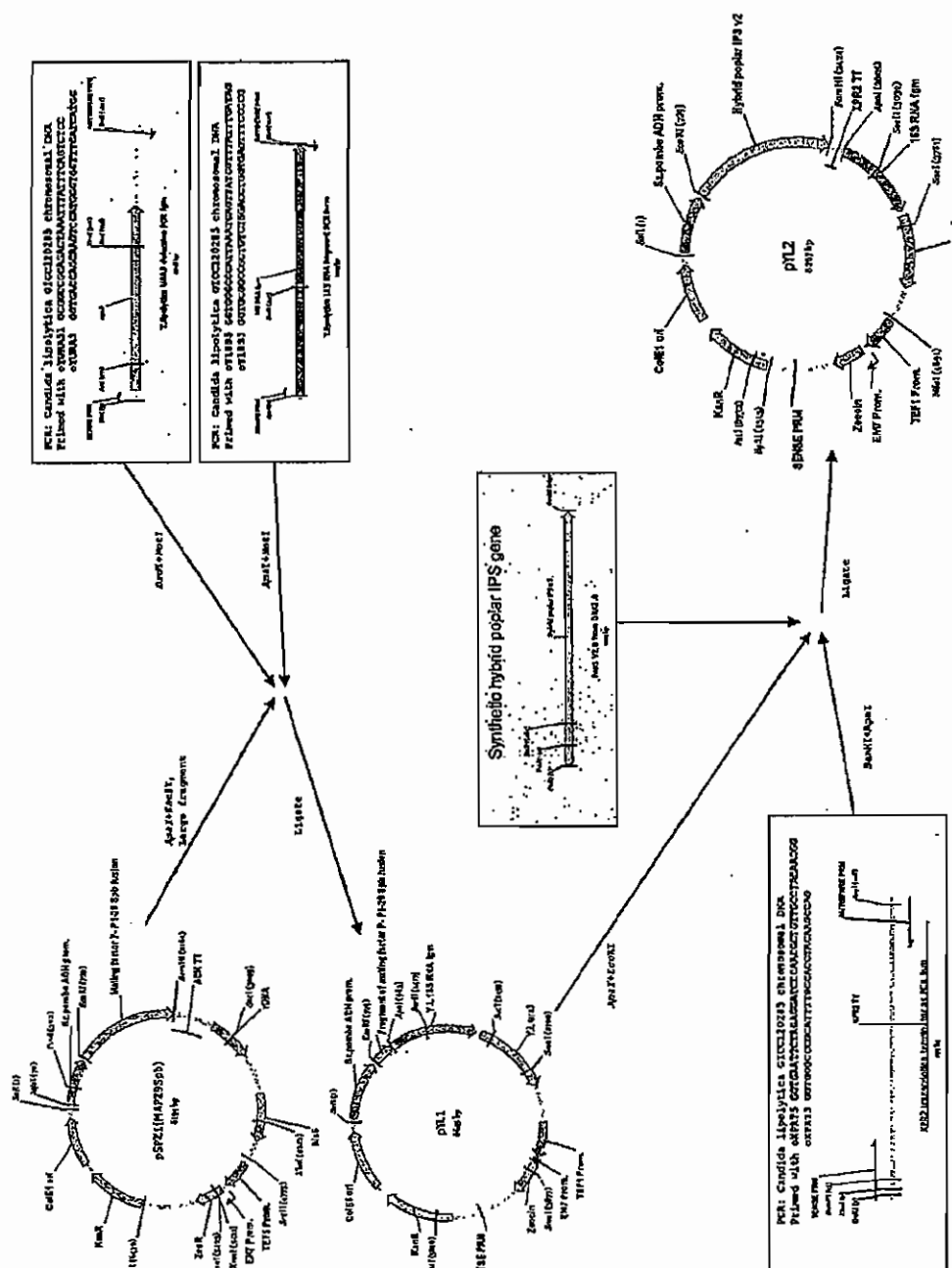


Figure 18B

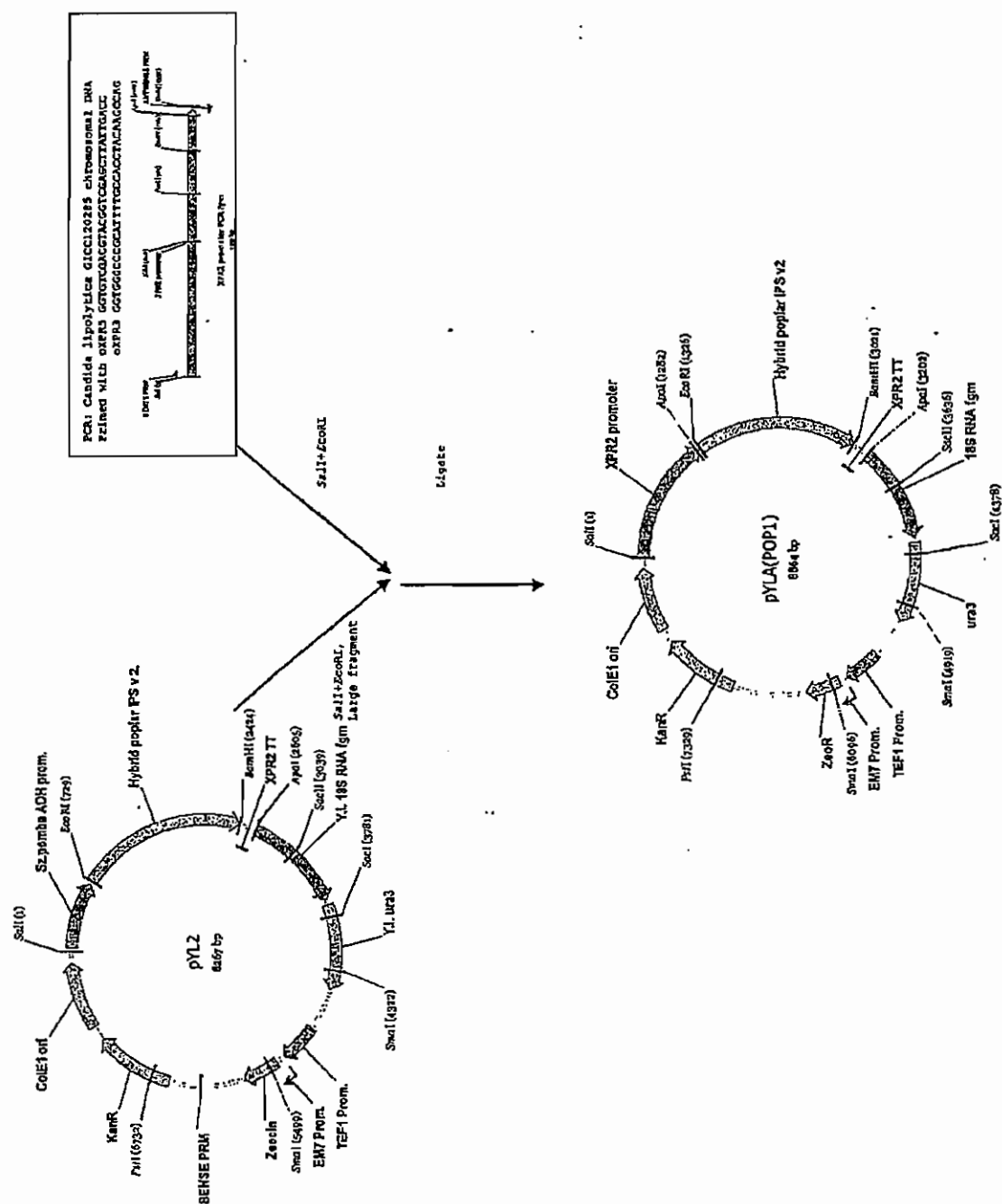


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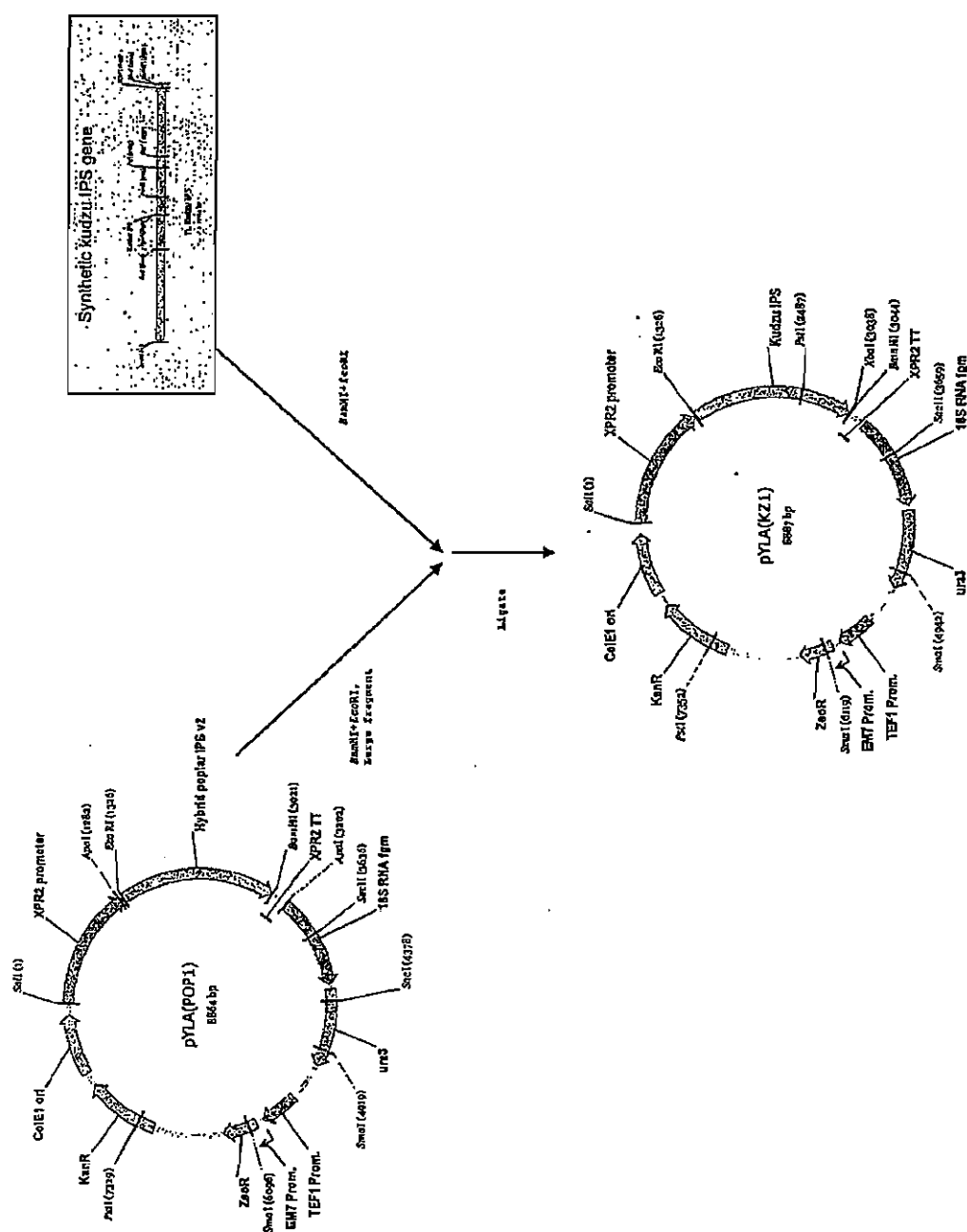


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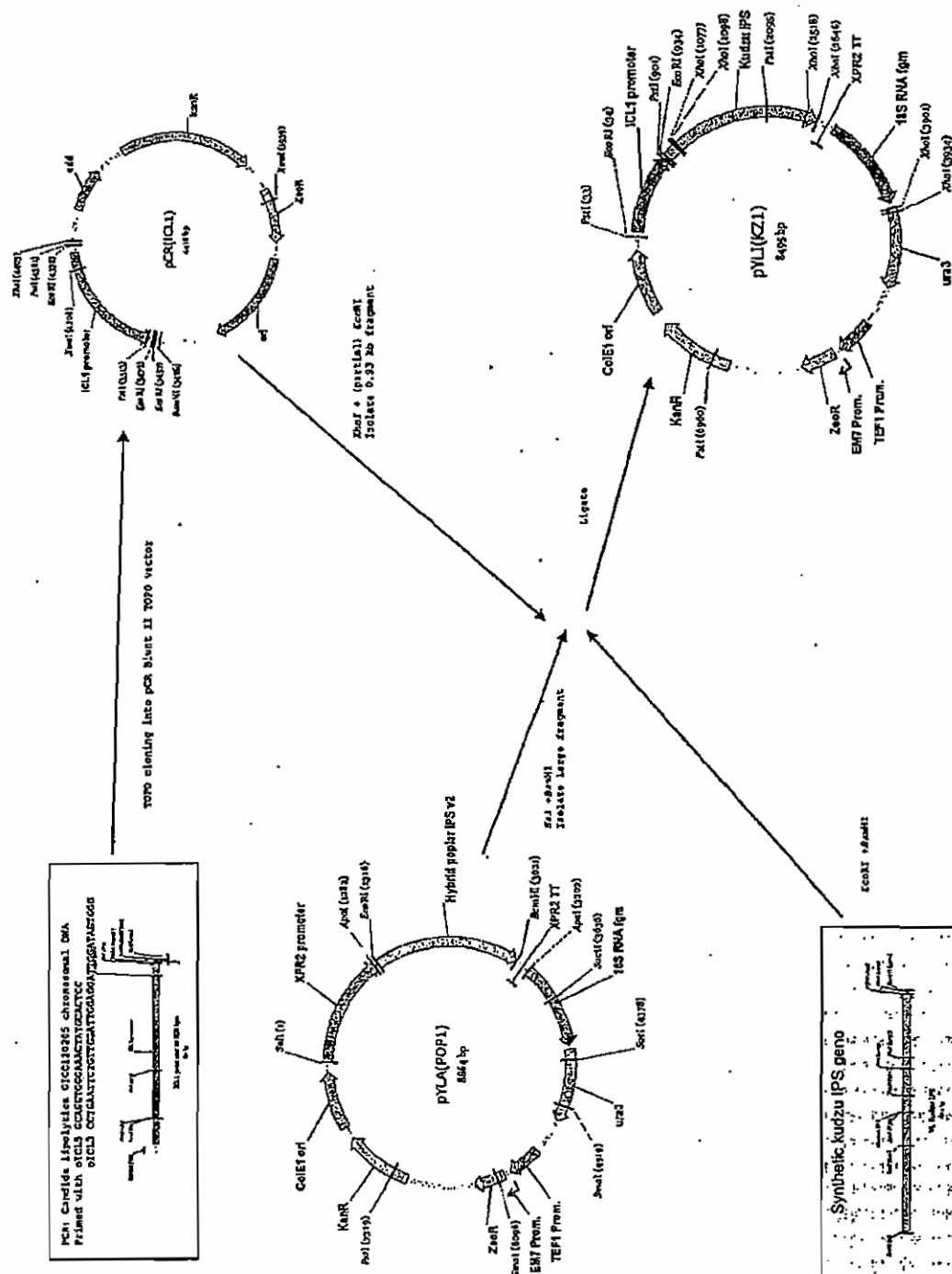


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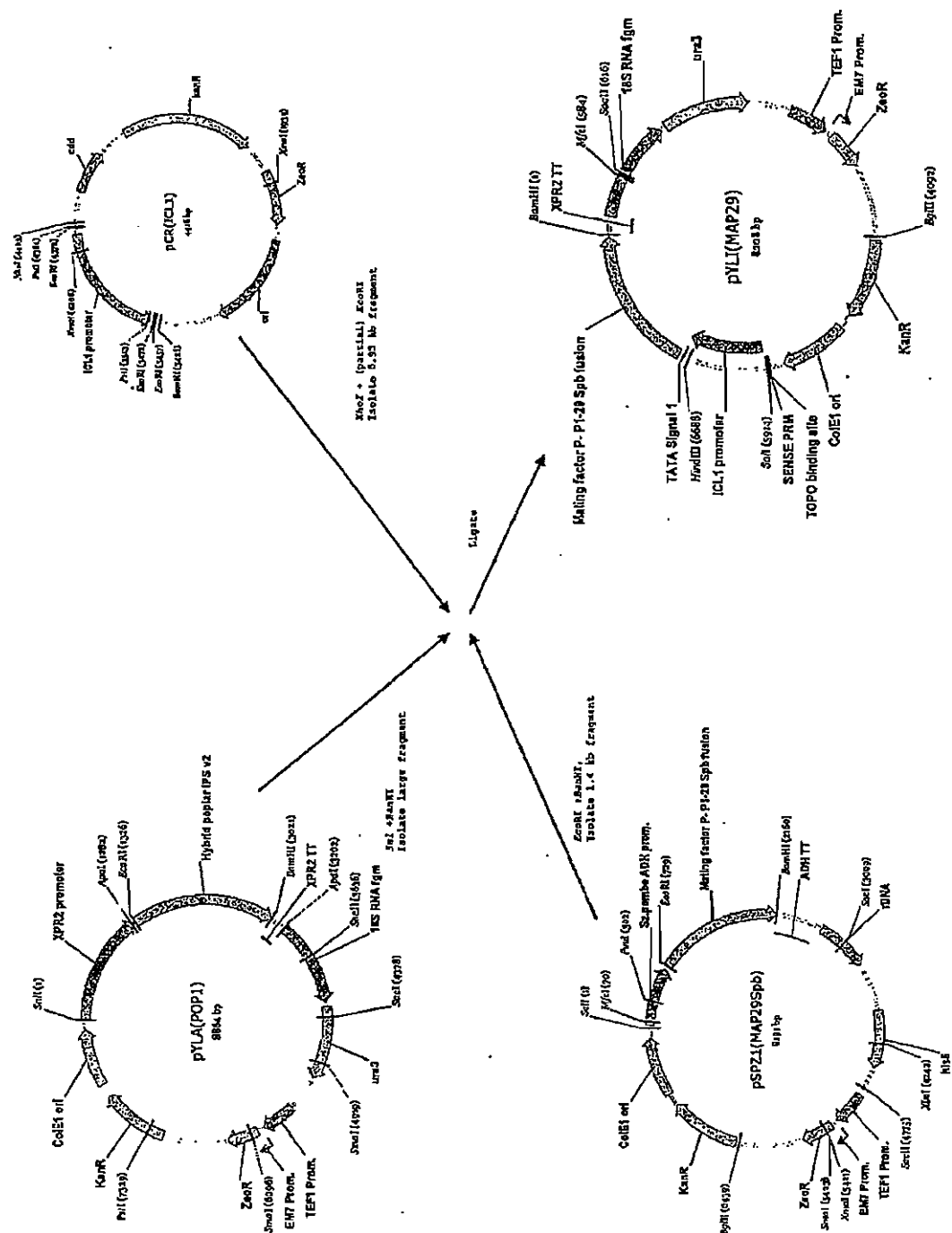
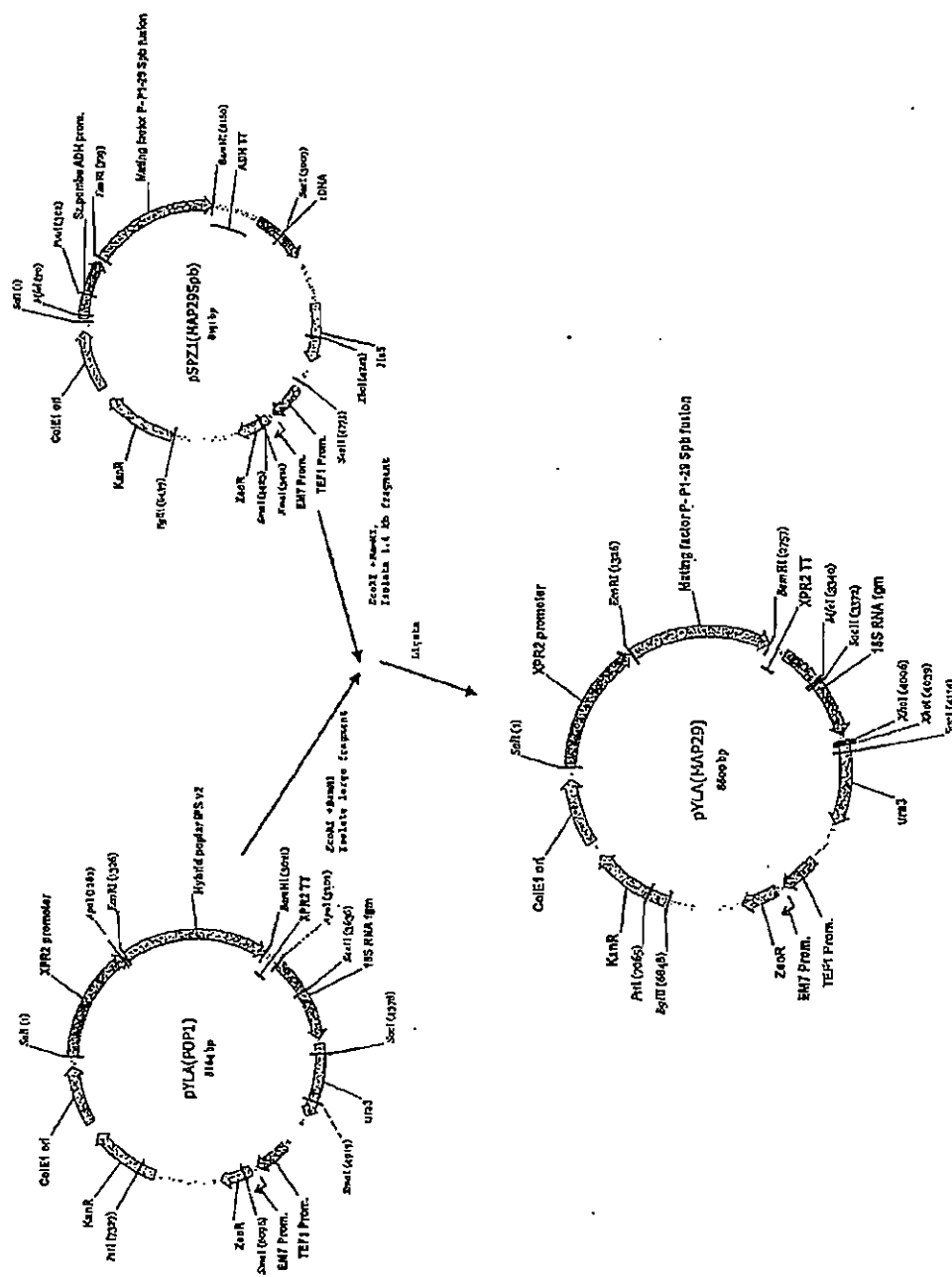
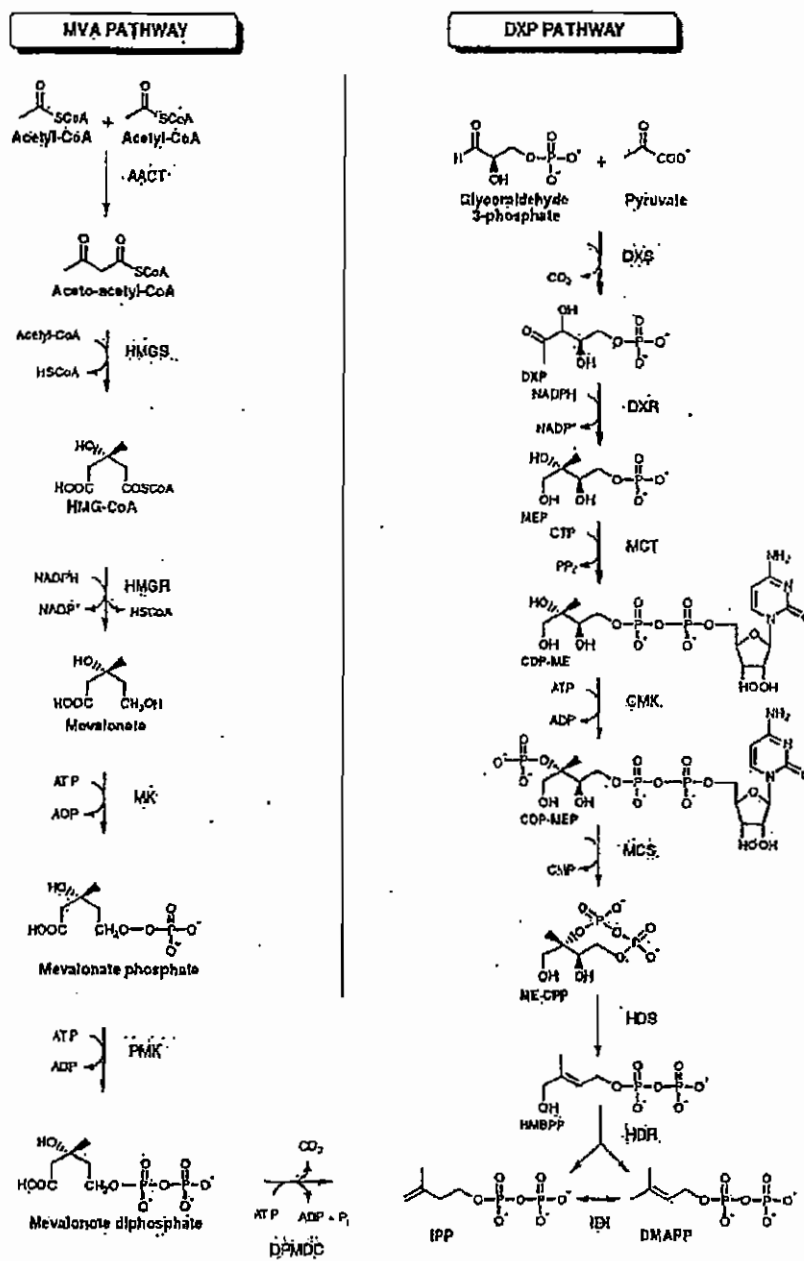


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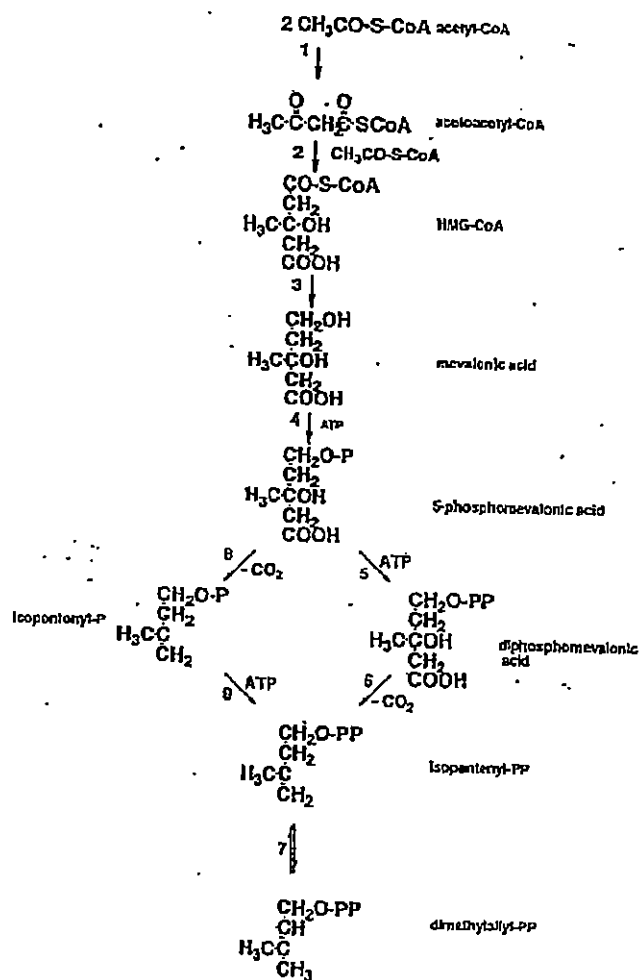
39/167

Figure 19A



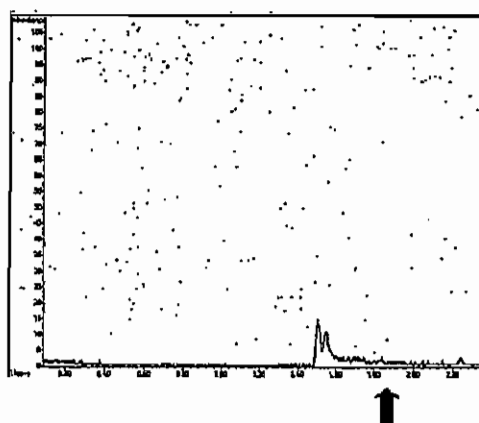
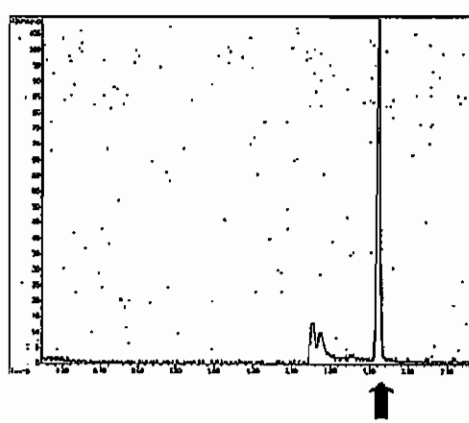
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Figure 19B



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Figure 20

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Figure 21

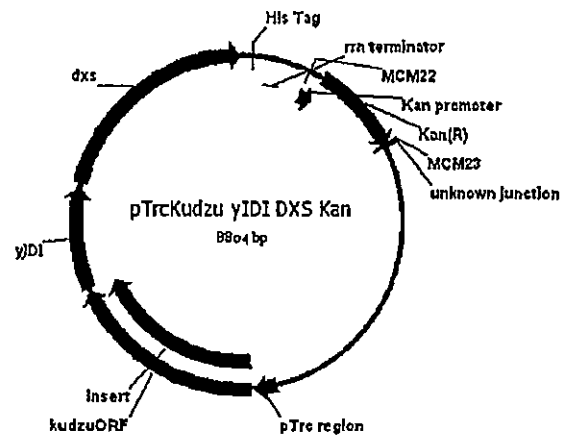


Figure 22A

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Figure 22B

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Figure 22C

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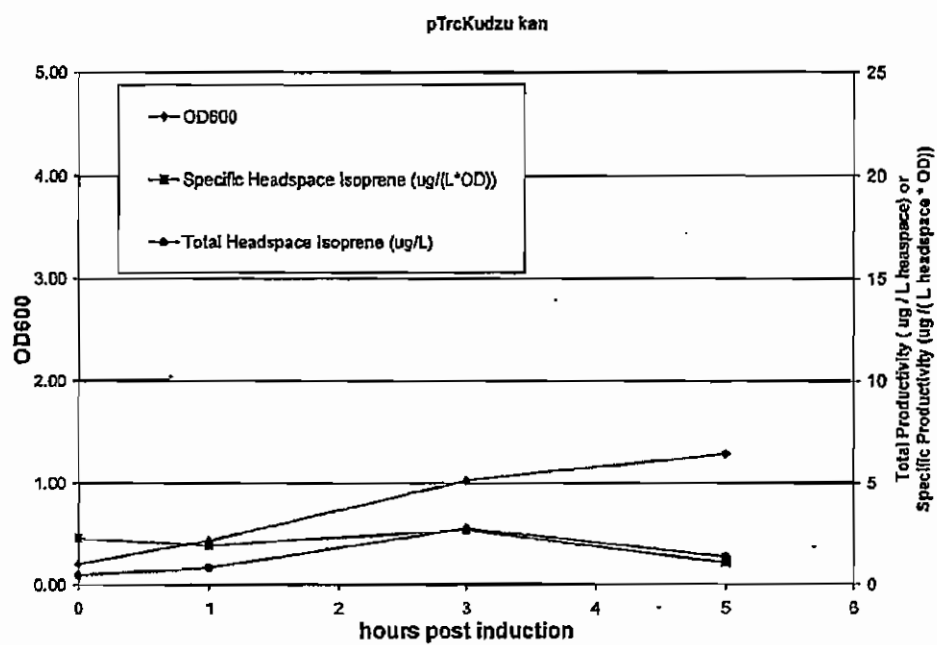
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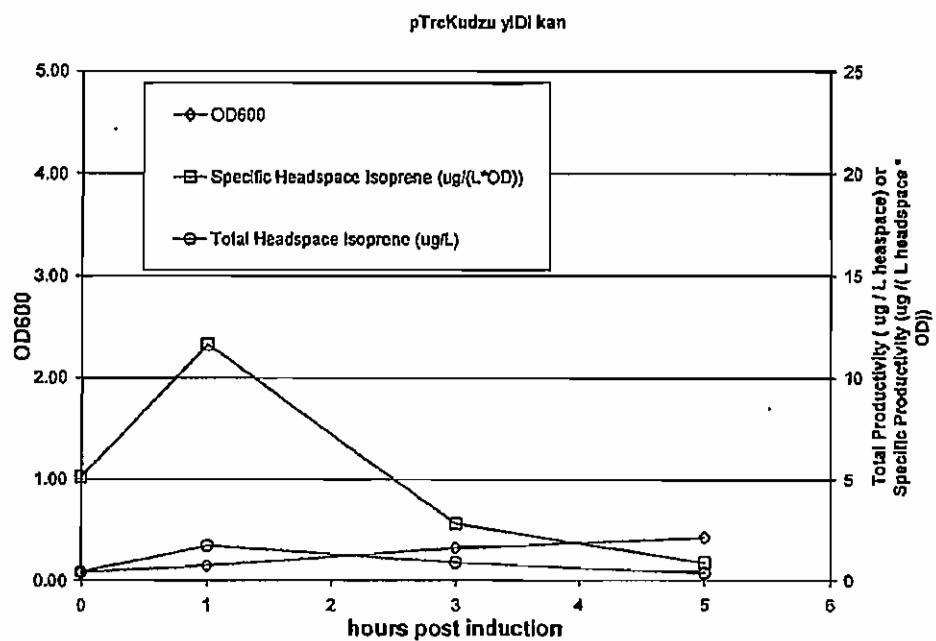
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Figure 23A



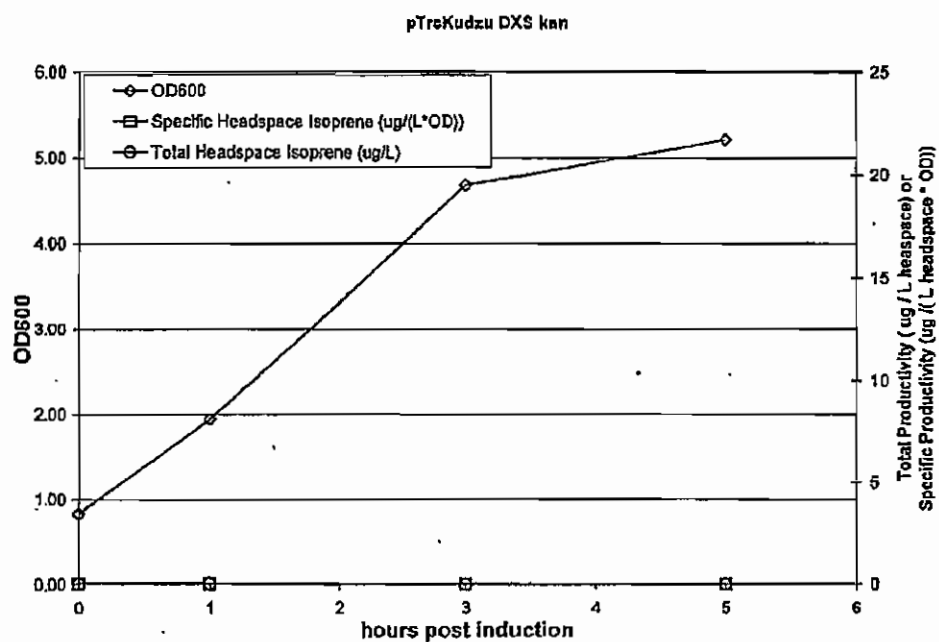
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Figure 23B



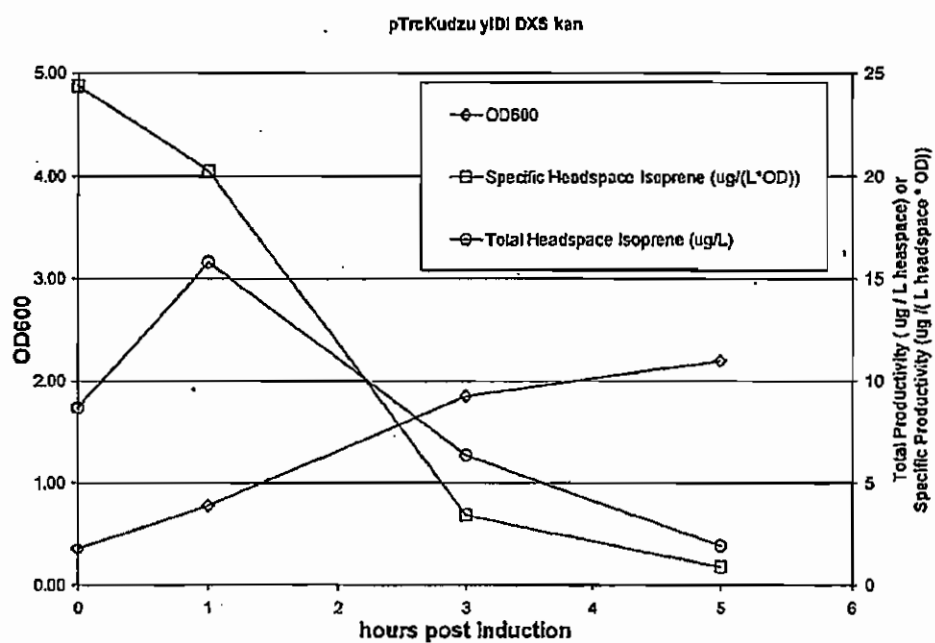
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Figure 23C



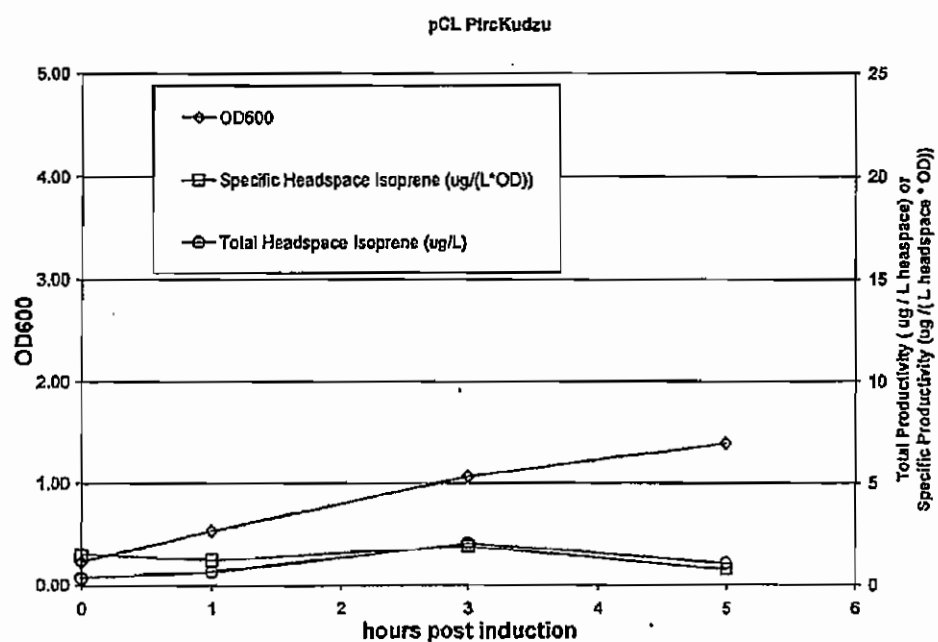
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Figure 23D



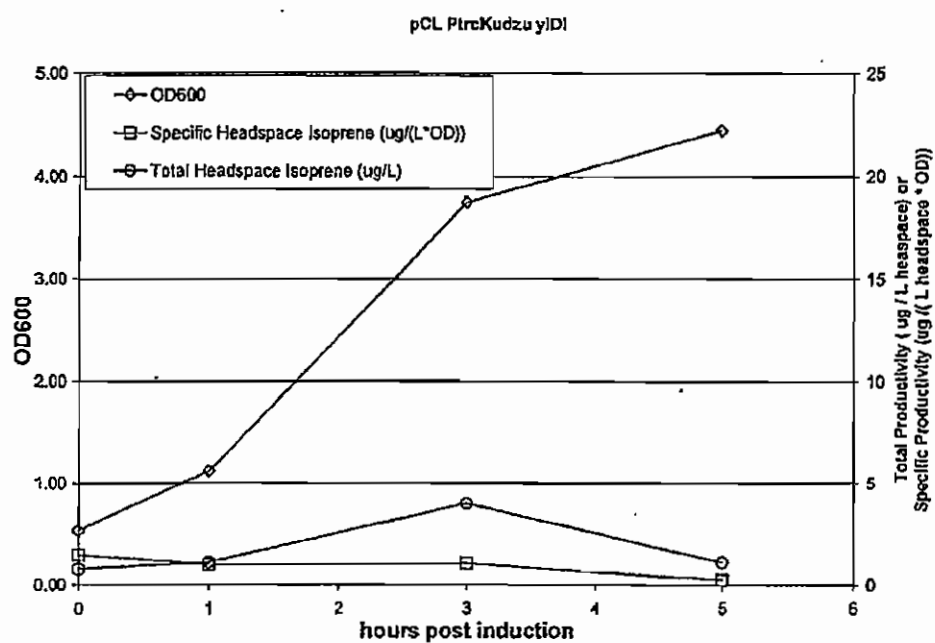
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Figure 23E



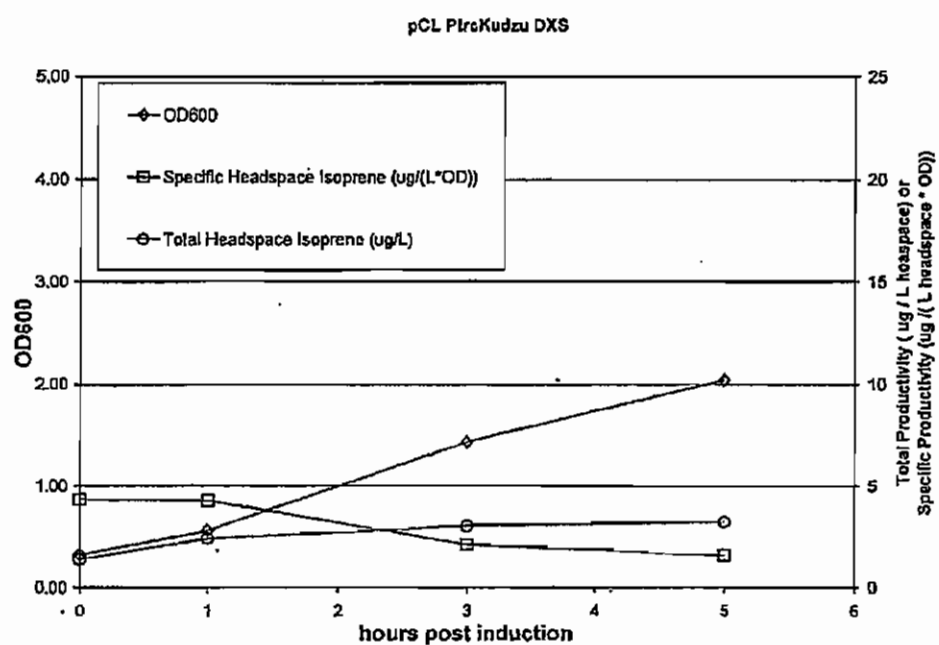
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Figure 23F



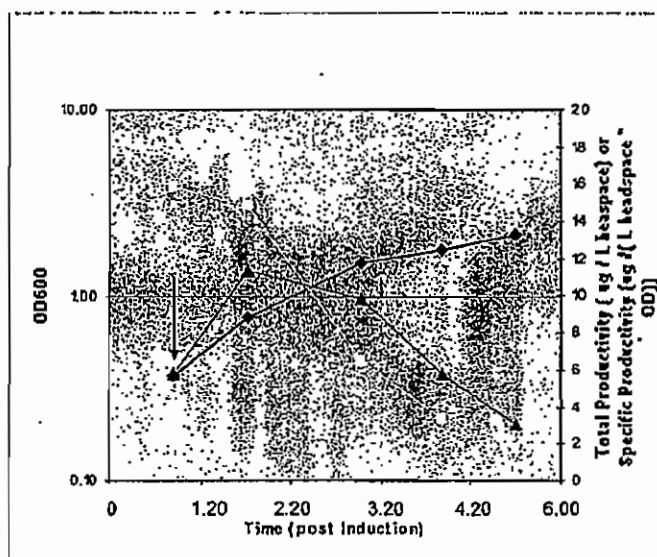
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Figure 23G



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Figure 23H



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Figure 24

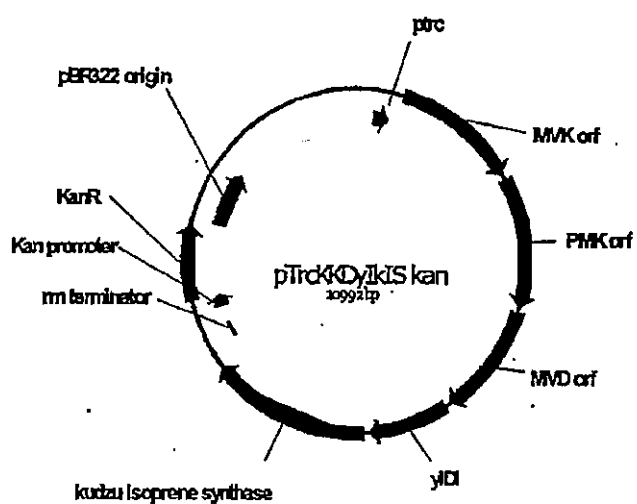


Figure 25A

5' -

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Figure 25B

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Figure 25C

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Figure 25D

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(SEQ ID NO:33)

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Figure 26

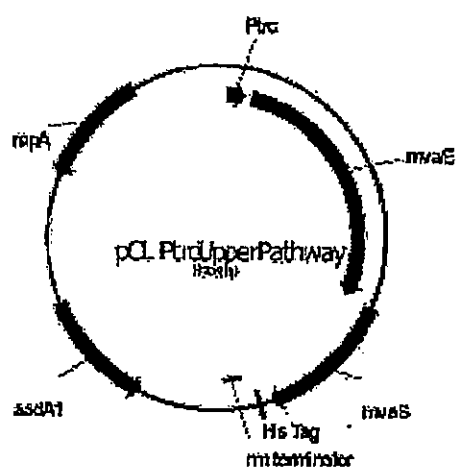


Figure 27A

5' -

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Figure 27B

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Figure 27C

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Figure 27D

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(SEQ ID NO:46)

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Figure 28

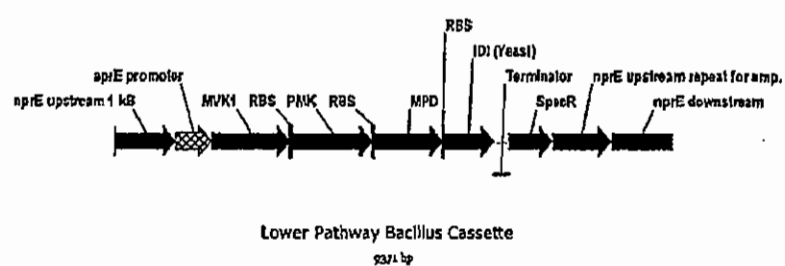


Figure 29A

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Figure 29B

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Figure 29C

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Figure 29D

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Figure 30

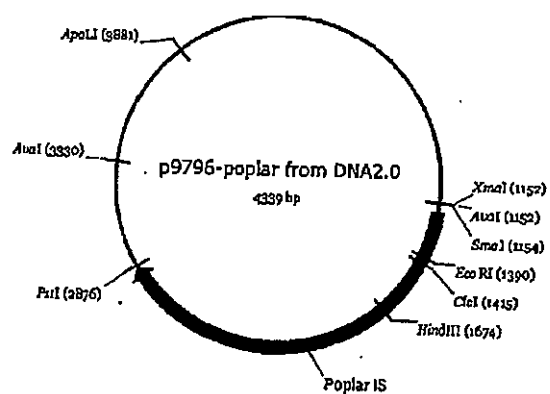


Figure 31A

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Figure 32

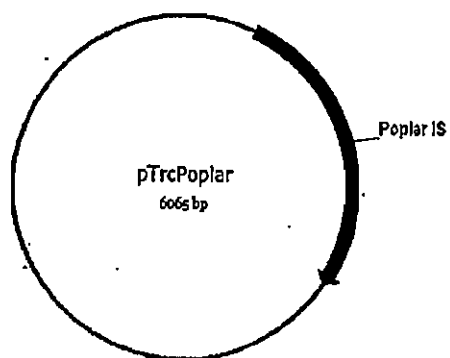


Figure 33A

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Figure 33B

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Figure 33C

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Figure 34

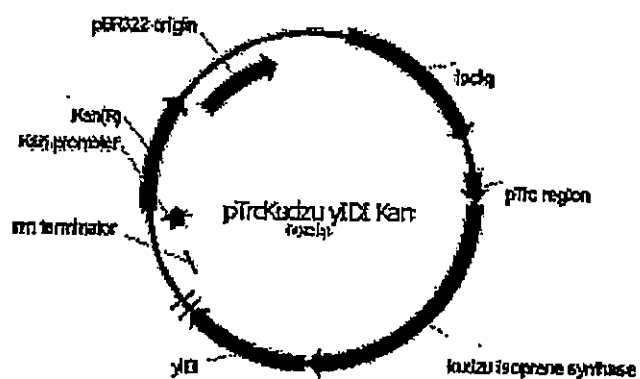


Figure 35A

5' -

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Figure 35B

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Figure 35C

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Figure 36

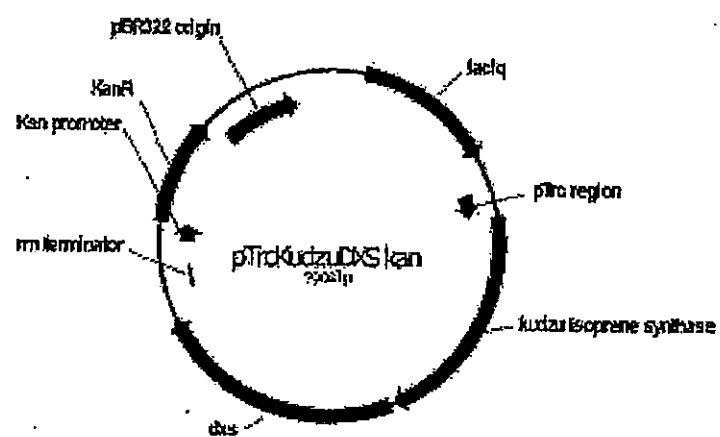


Figure 37A

5'-

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Figure 37B

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Figure 37C

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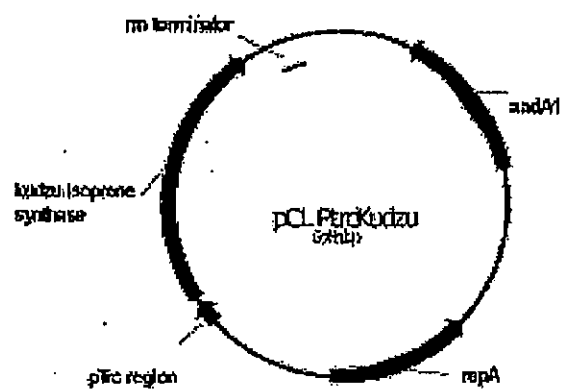
Figure 38

Figure 39A

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Figure 39B

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Figure 39C

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Figure 40

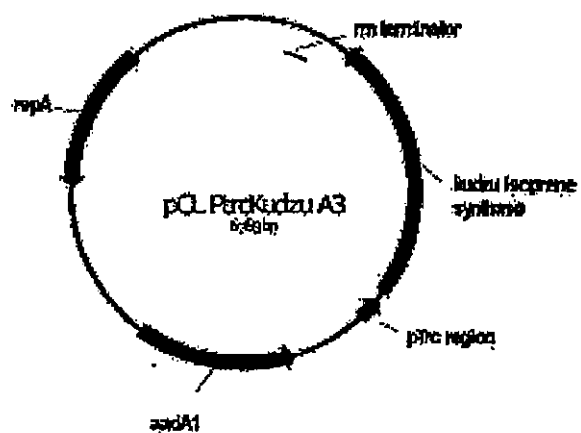


Figure 41A

5' -

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Figure 41B

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Figure 41C

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Figure 42

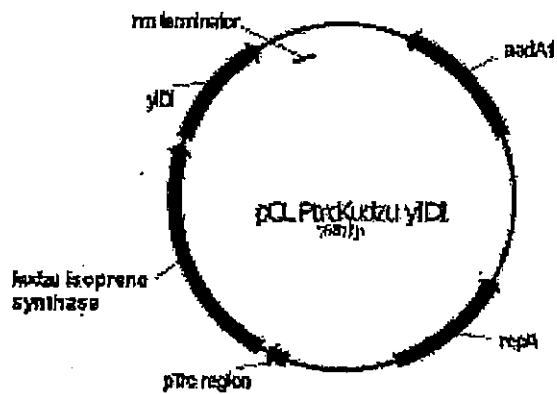


Figure 43A

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Figure 43B

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Figure 43C

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(SEQ ID NO:54)

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Figure 44

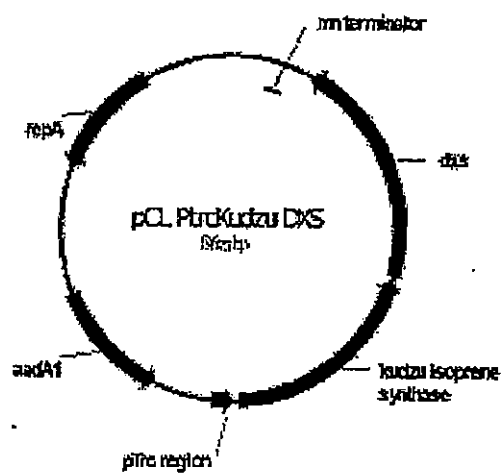


Figure 45A

5' -

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Figure 45B

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Figure 45C

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Figure 45D

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Figure 46A

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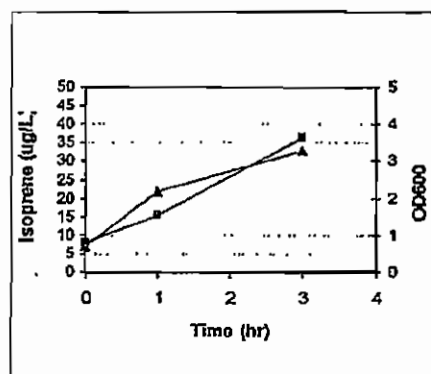
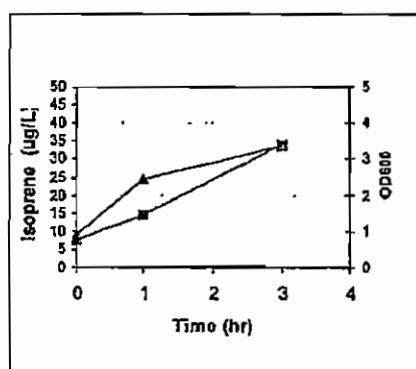


Figure 46B

B.



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Figure 46C

C.

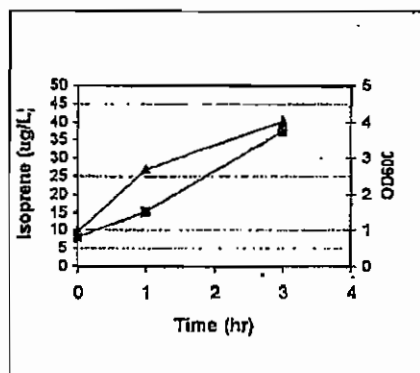
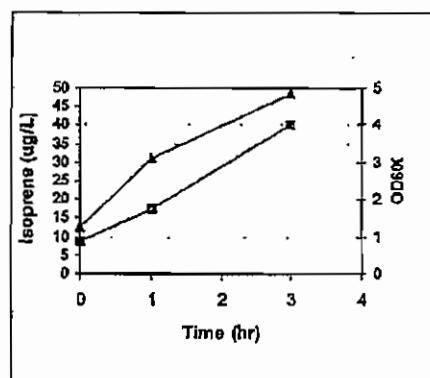


Figure 46D

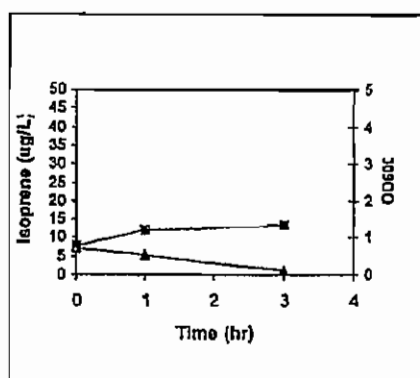
D.



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Figure 46E

E.



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Figure 47A

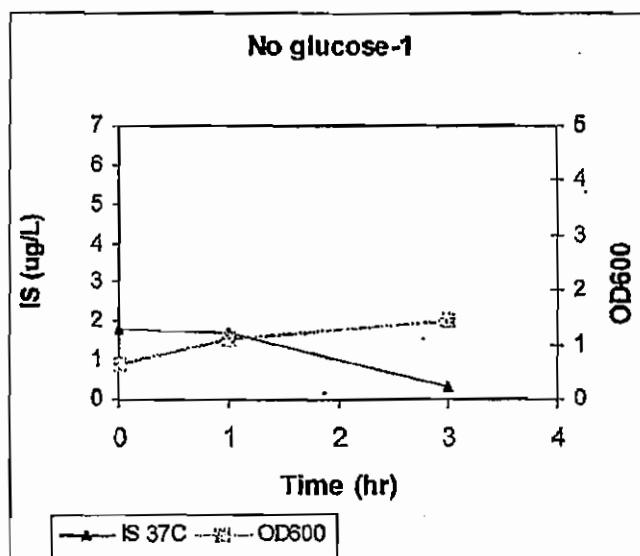
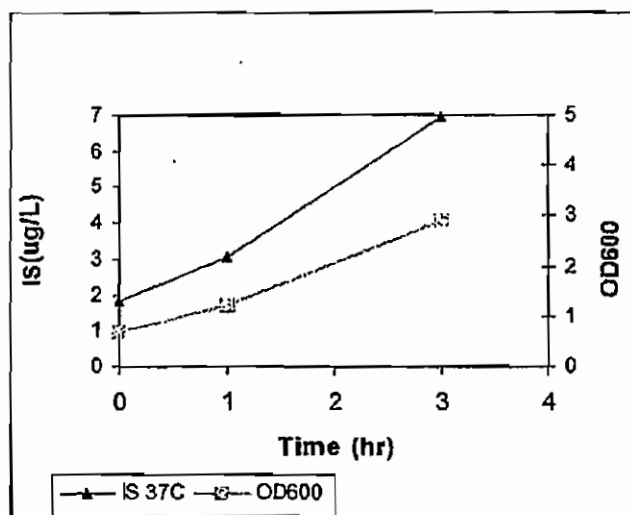


Figure 47B



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Figure 47C

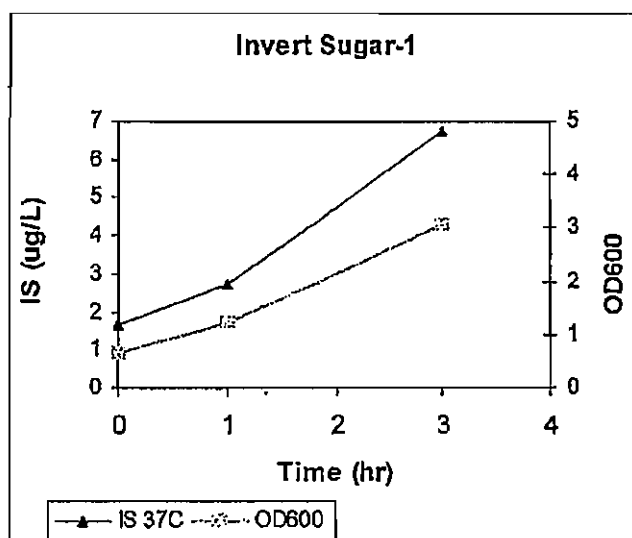
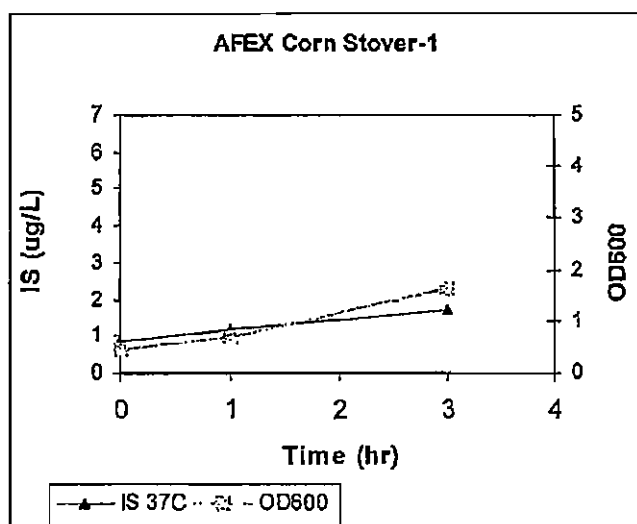


Figure 47D



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Figure 48A

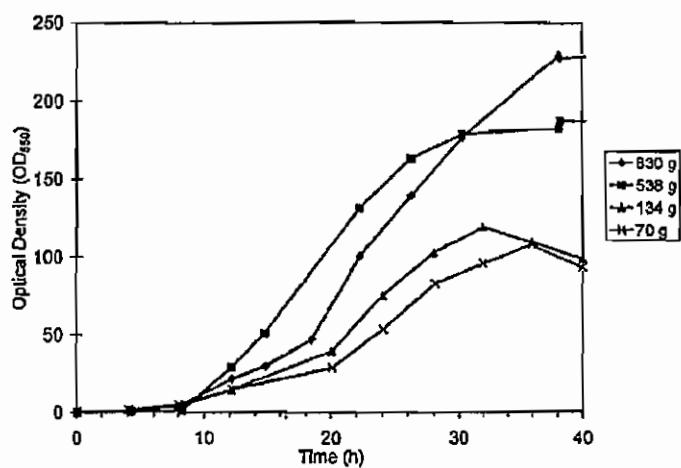
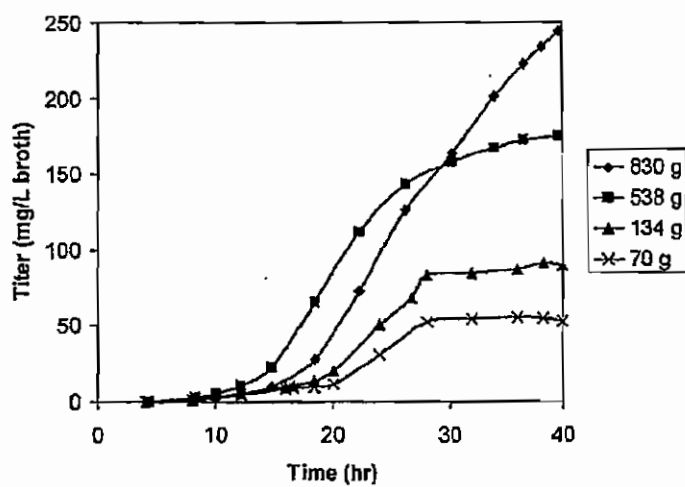
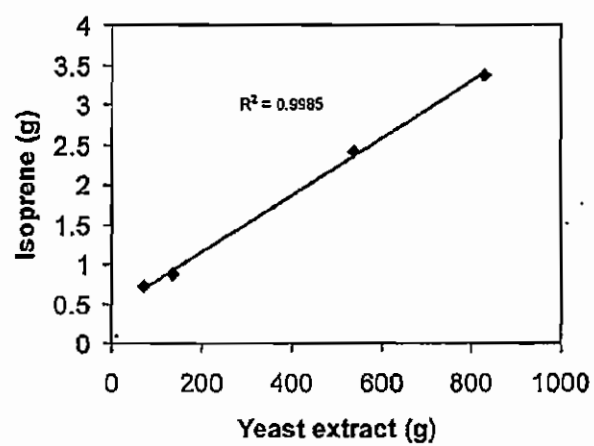


Figure 48B

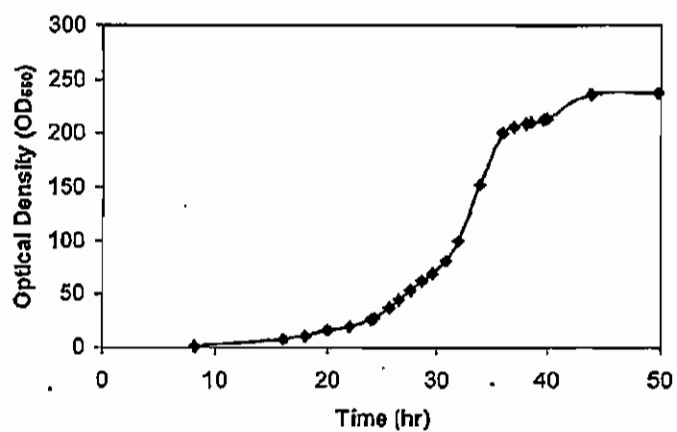
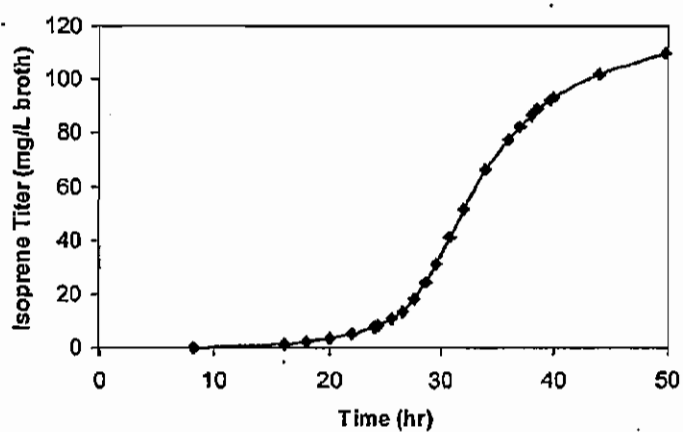


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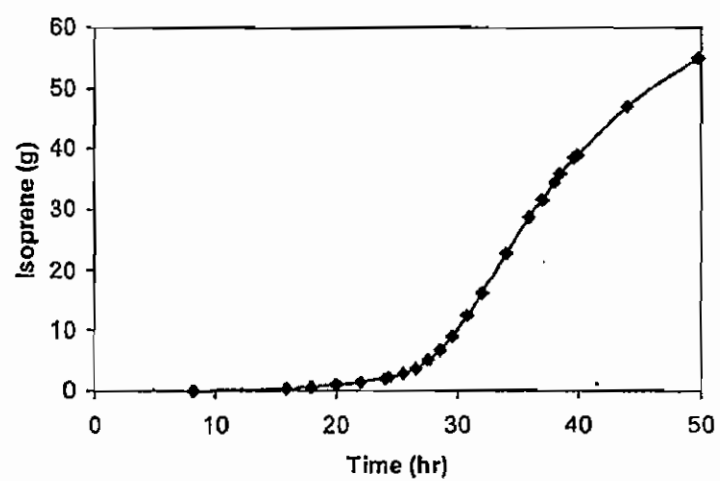
Figure 48C



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Figure 49A**Figure 49B**

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Figure 49C

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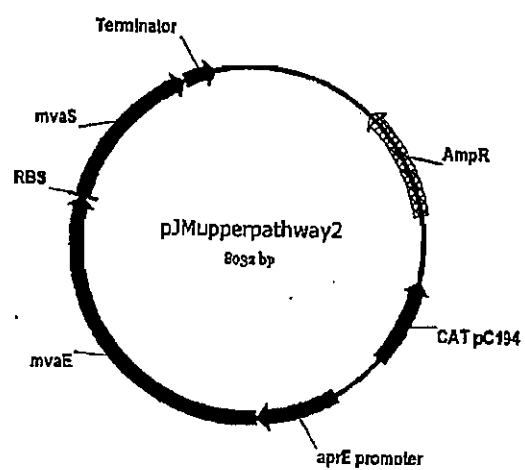
Figure 50

Figure 51A

5' -

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Figure 51B

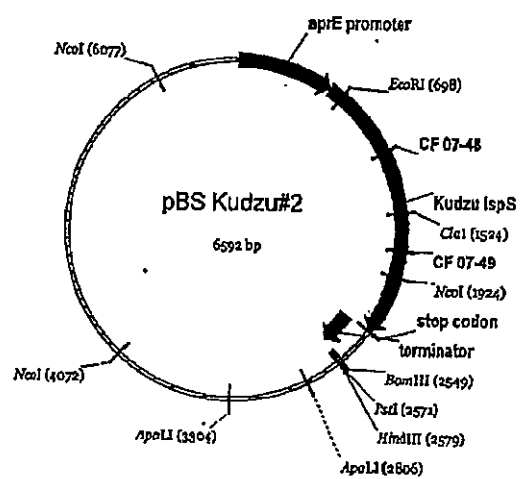
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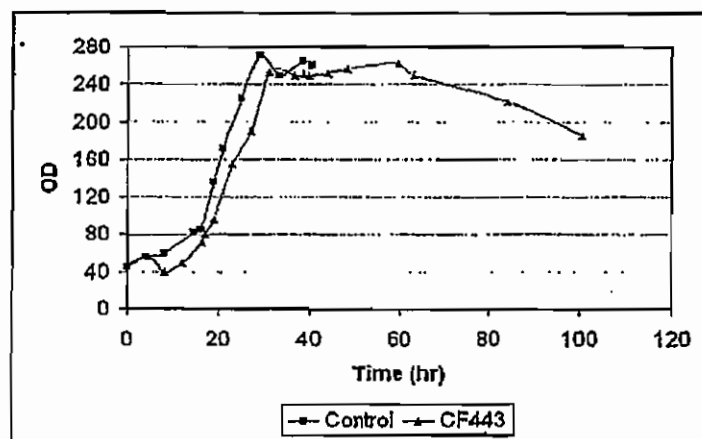
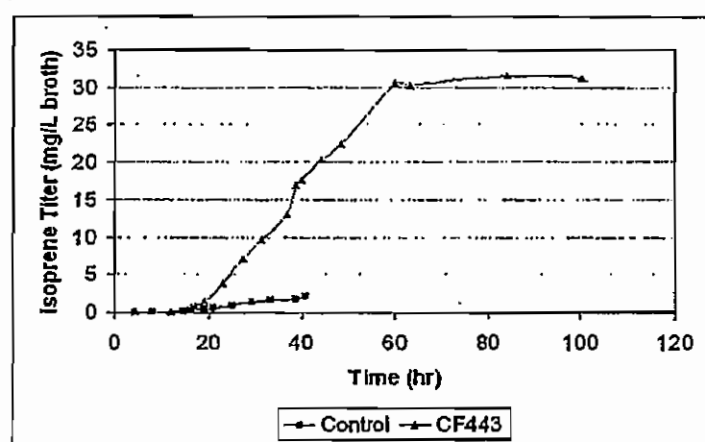
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Figure 52

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Figure 53A**Figure 53B**

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Figure 54

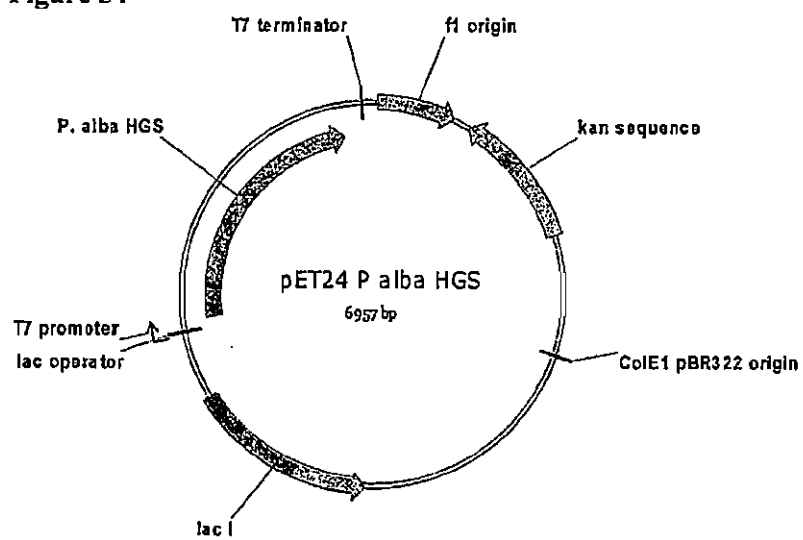


Figure 55A

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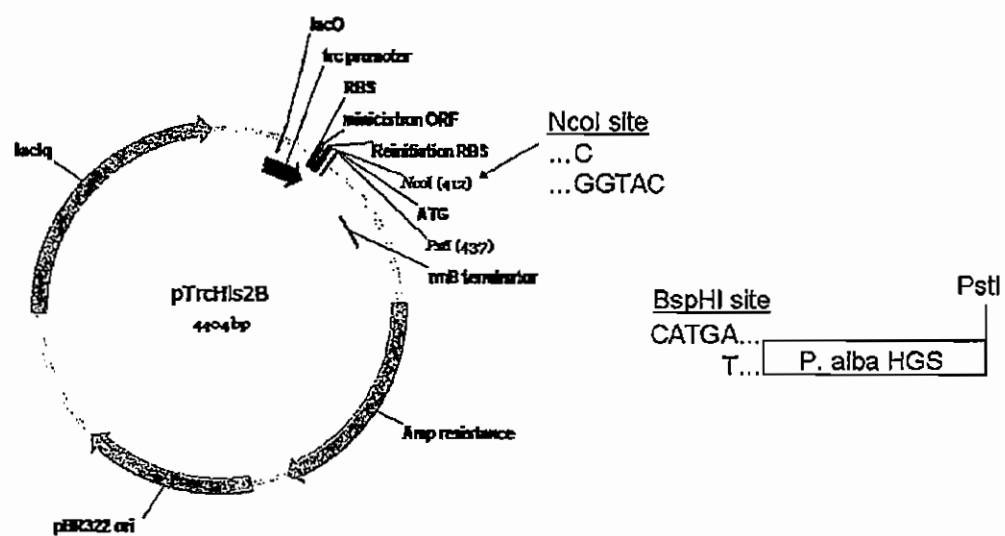
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Figure 56



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Figure 57

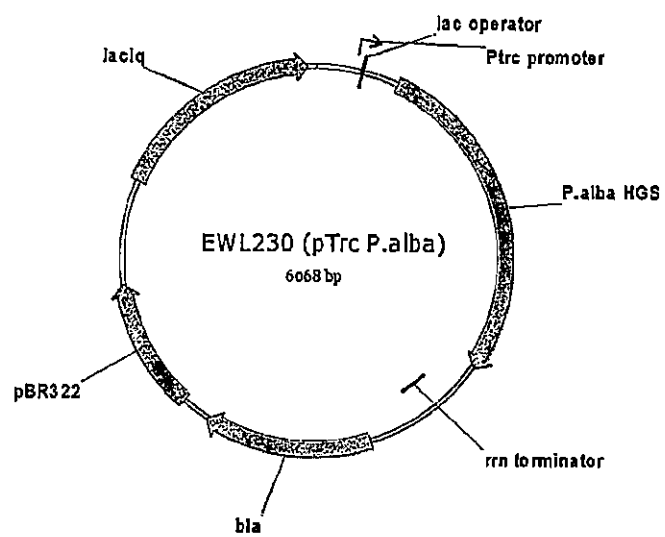


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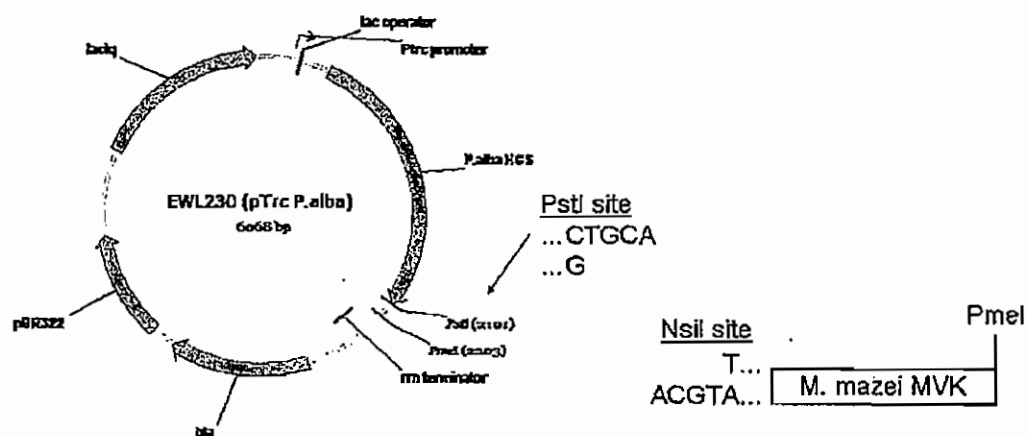
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Figure 58B

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Figure 59



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Figure 60

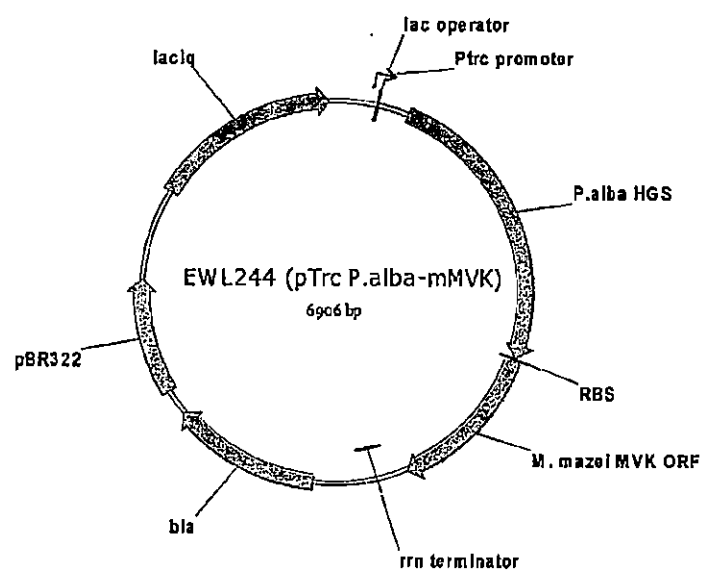


Figure 61B

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Figure 62

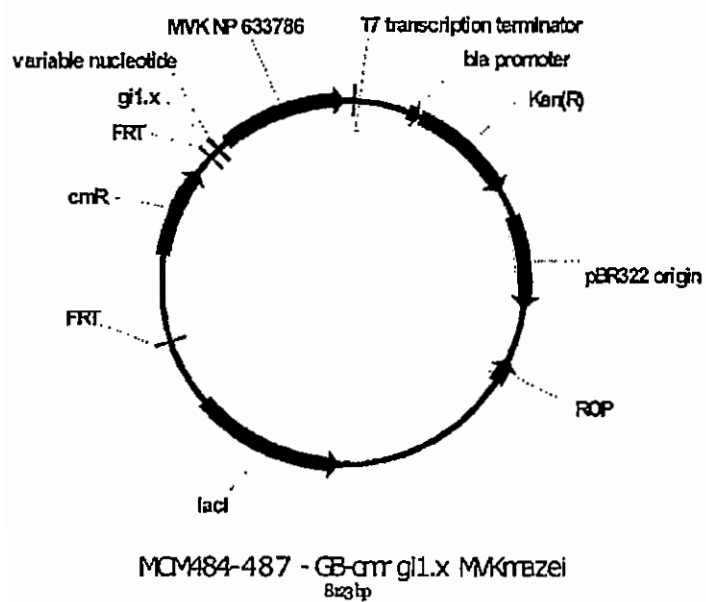


Figure 63A

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Figure 63C

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Figure 64A

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Figure 64B

[illegible]

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Figure 64C

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Figure 65A

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Figure 65C

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Figure 66A

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Figure 66C

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Figure 67A

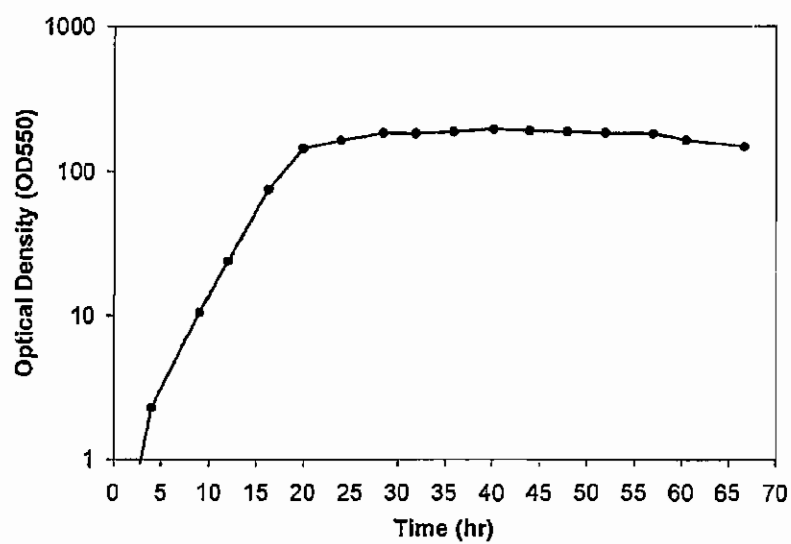
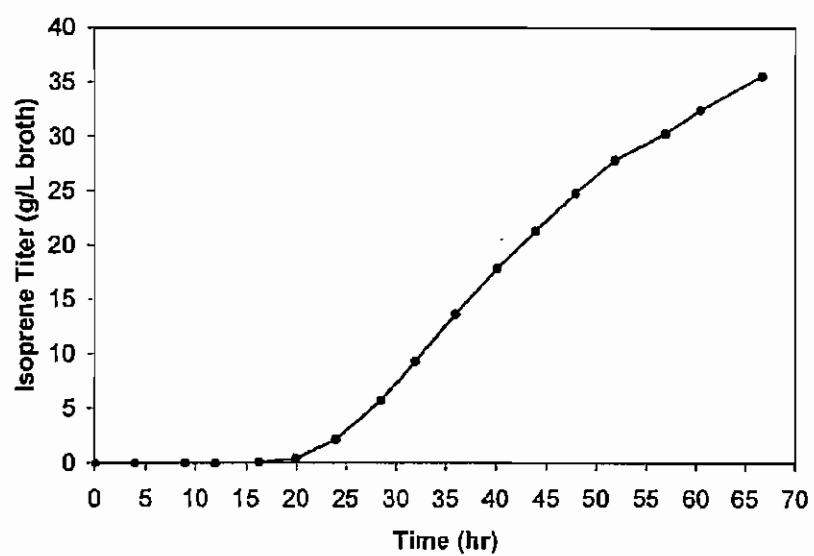


Figure 67B



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Figure 67C

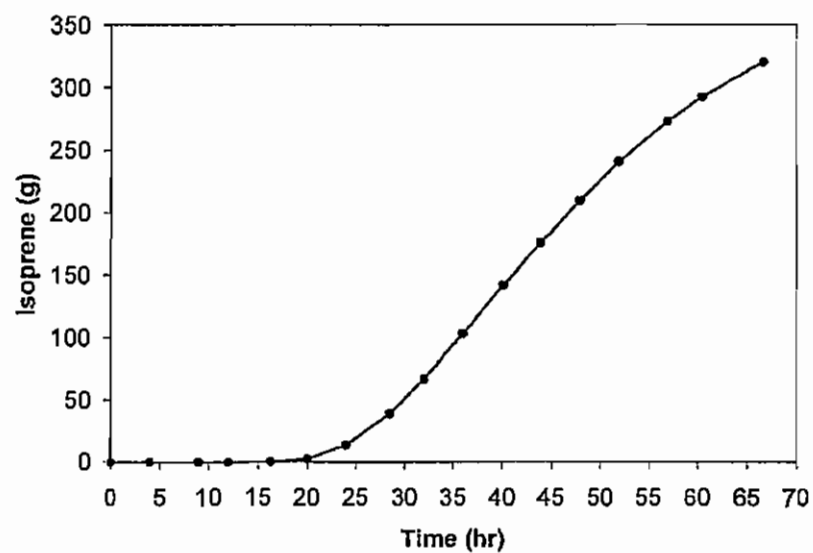
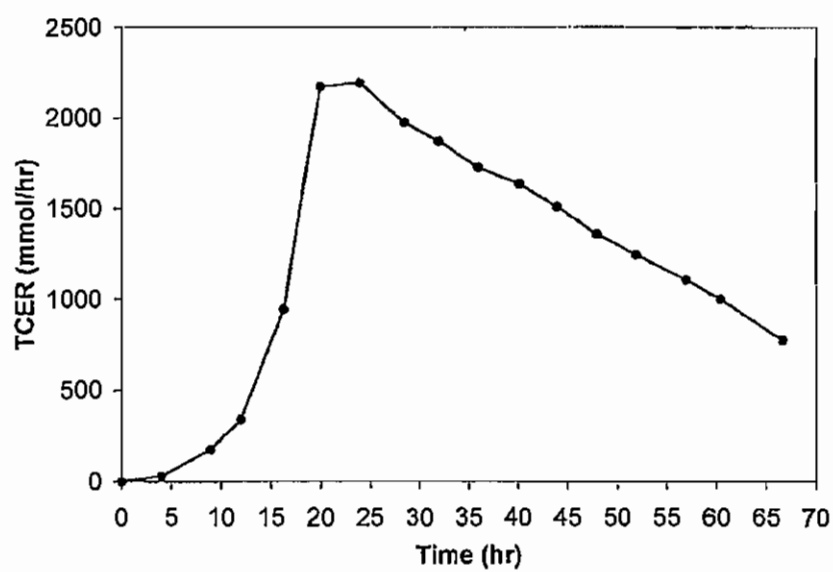


Figure 67D



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Figure 68A

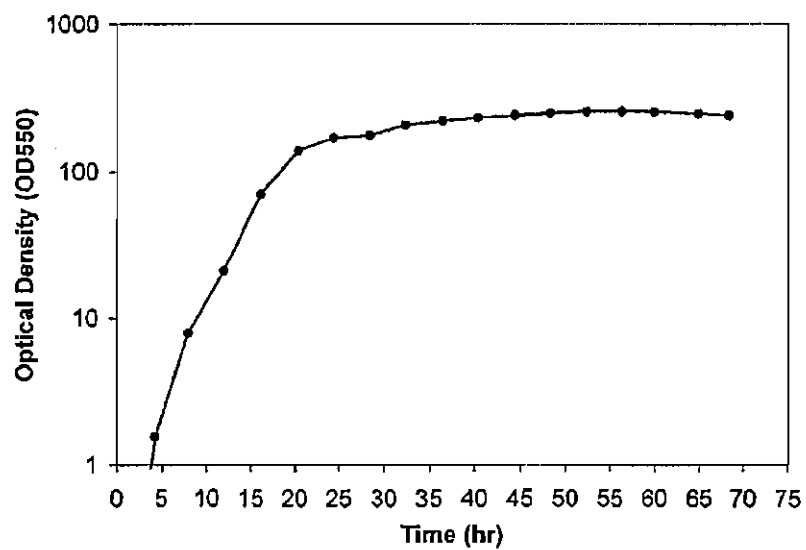
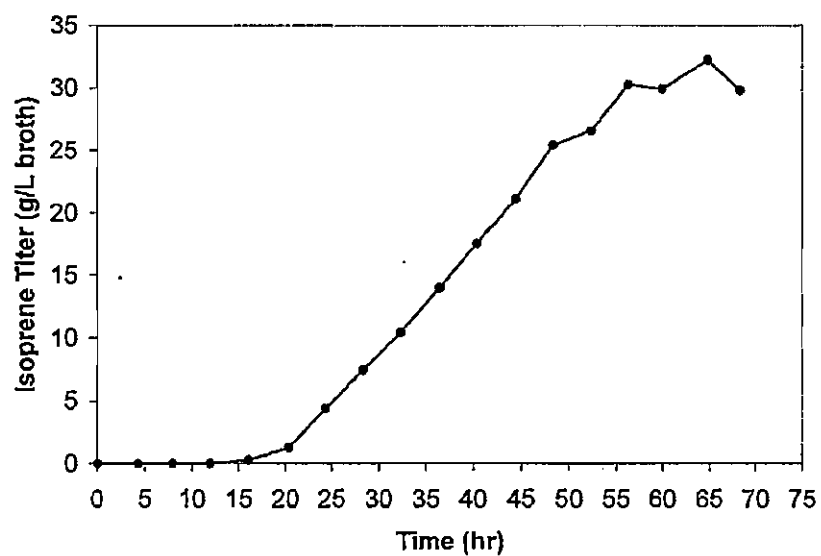


Figure 68B



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Figure 68C

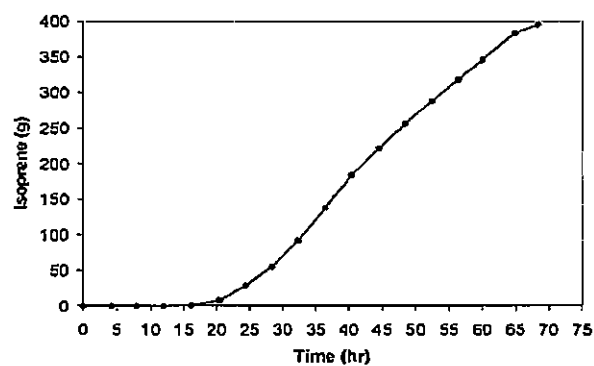


Figure 68D

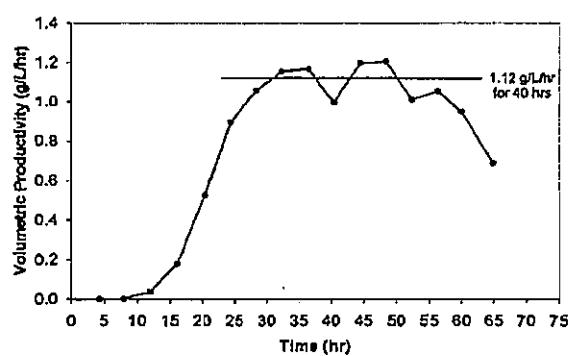
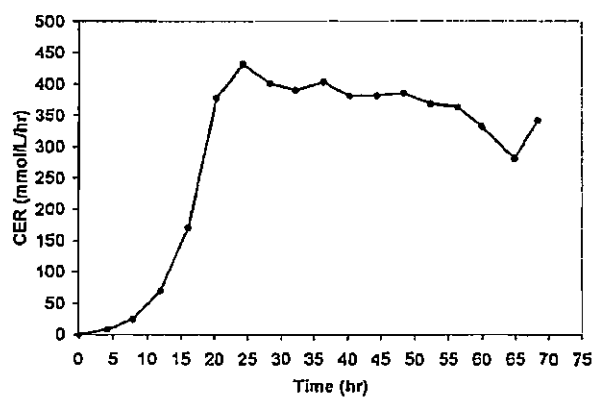


Figure 68E



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Figure 69A

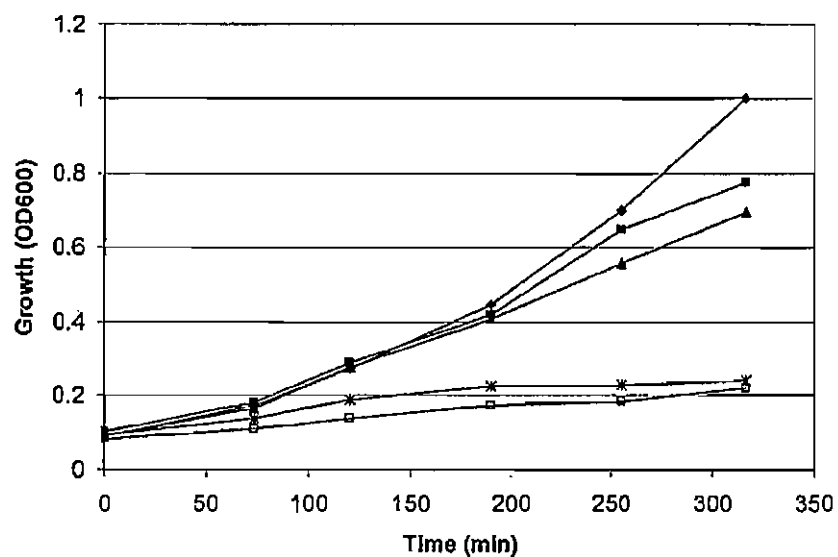
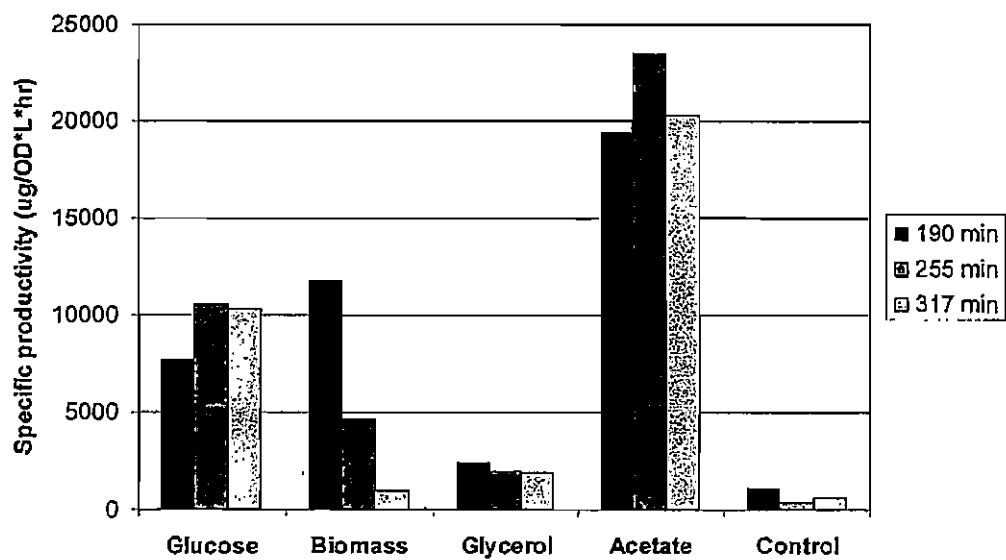


Figure 69B



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Figure 69C

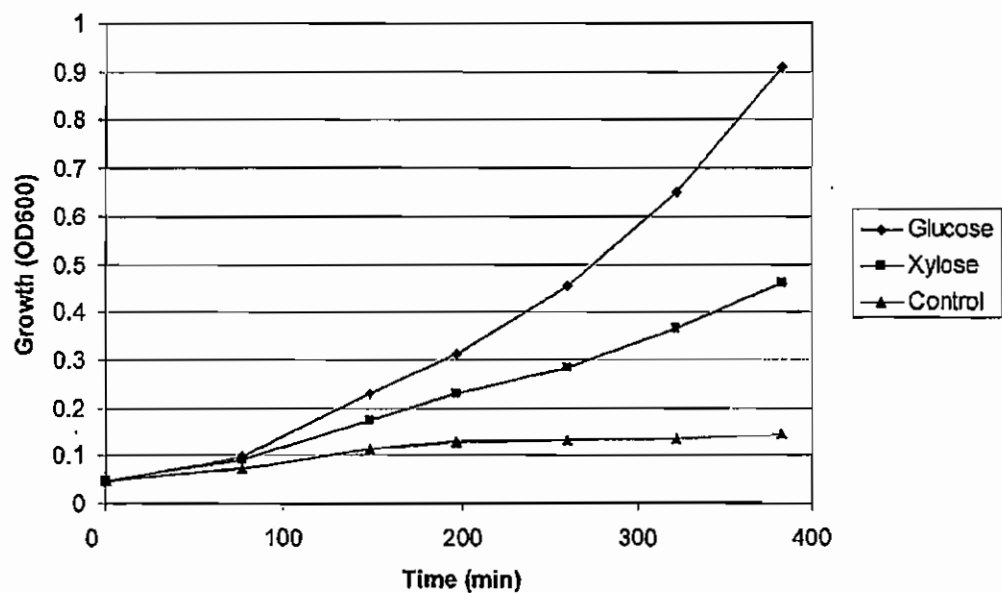
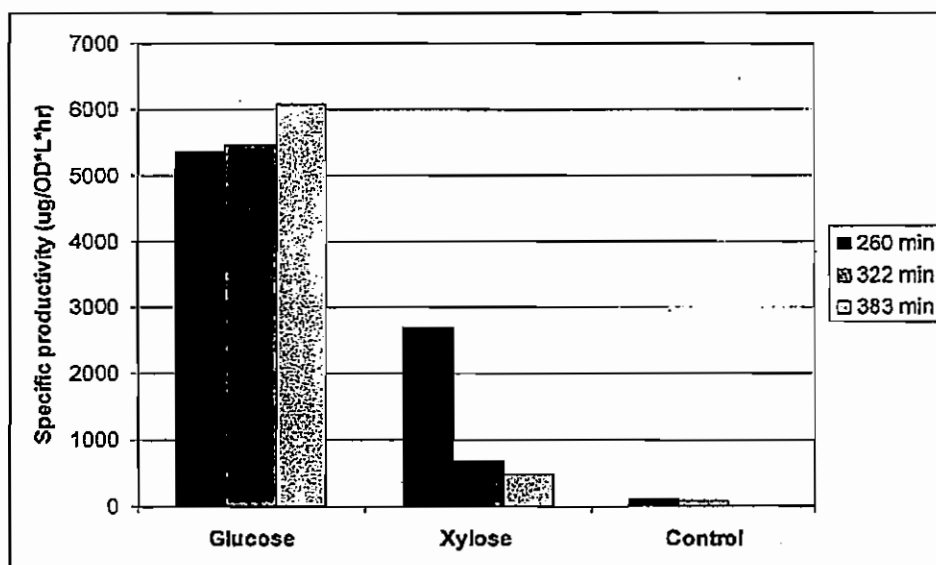


Figure 69D



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Figure 70A

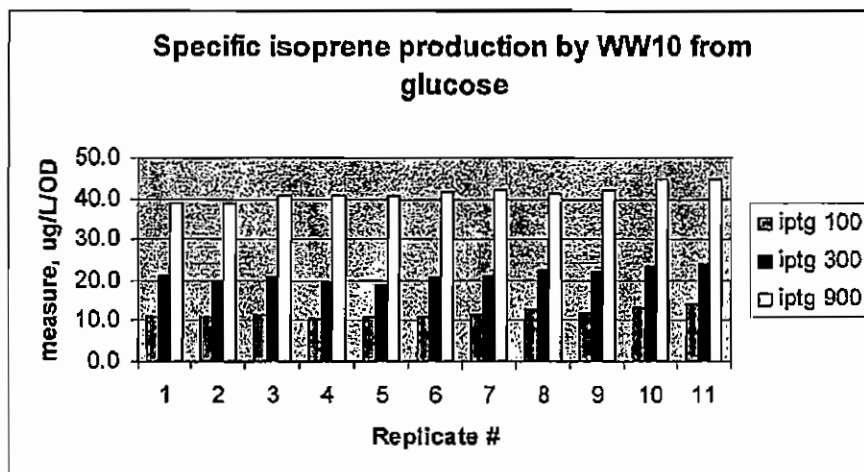
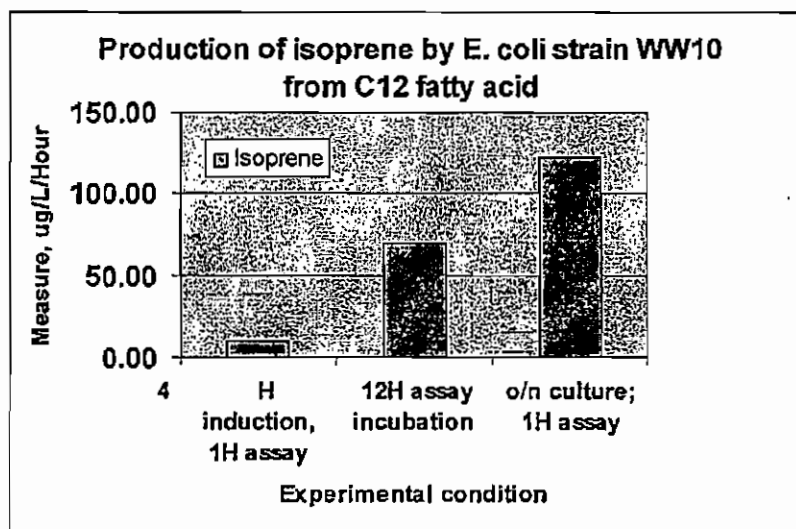
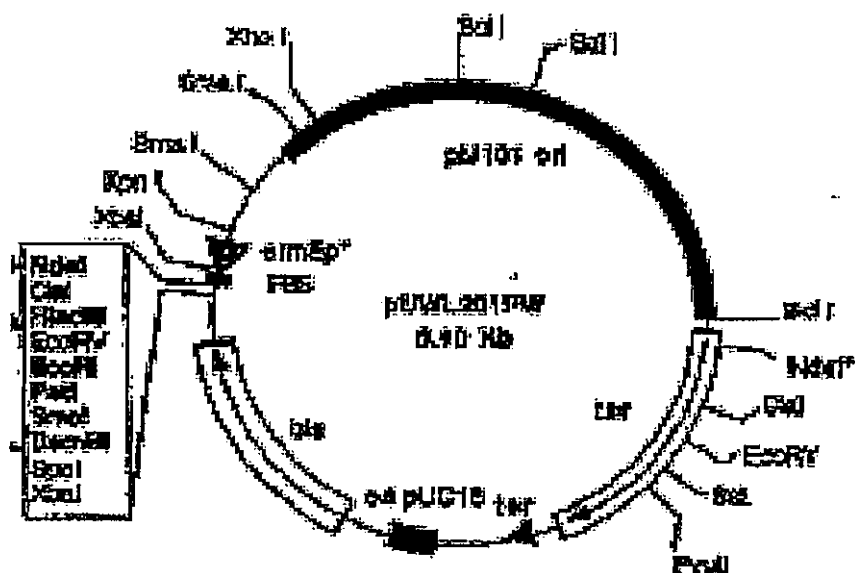


Figure 70B



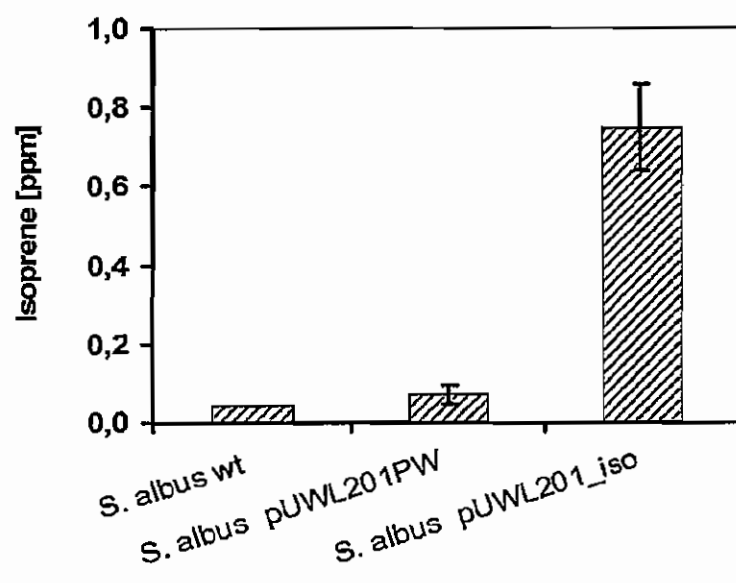
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Figure 71



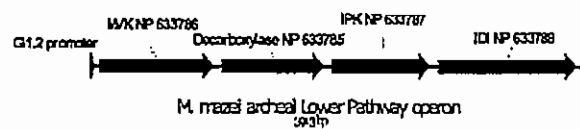
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Figure 72



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Figure 73A



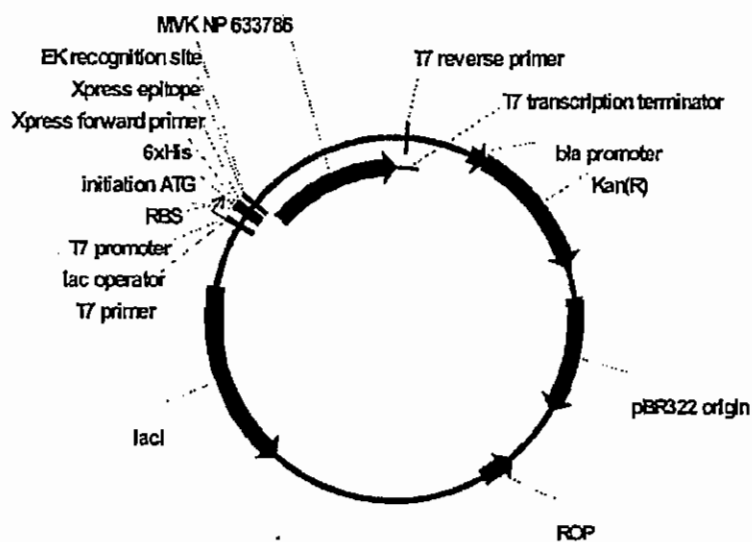
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Figure 73C

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(SEQ ID NO:113)

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Figure 74A



MCM376 - MMK from *M. mazei* archeal Lowerin pET200D
6647bp

Figure 74B

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Figure 74C

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Figure 75A

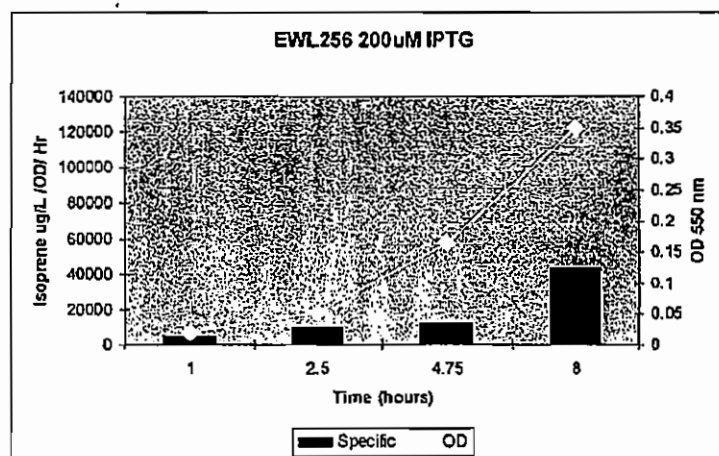
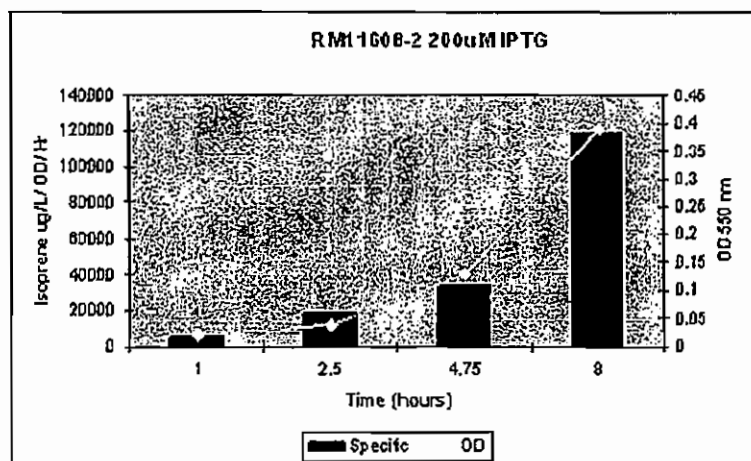


Figure 75B



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Figure 75C

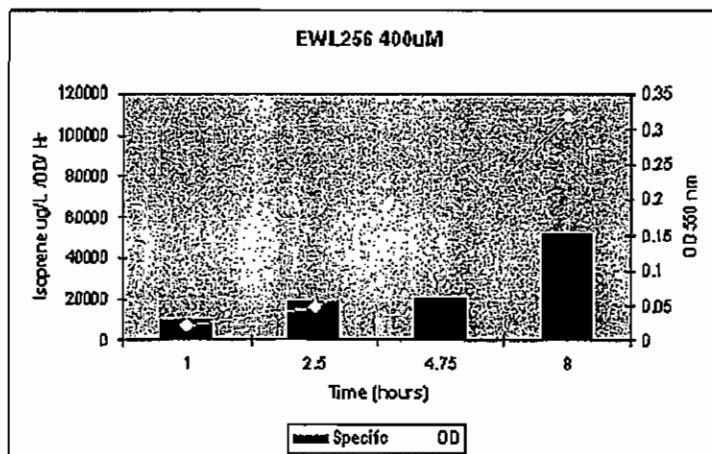


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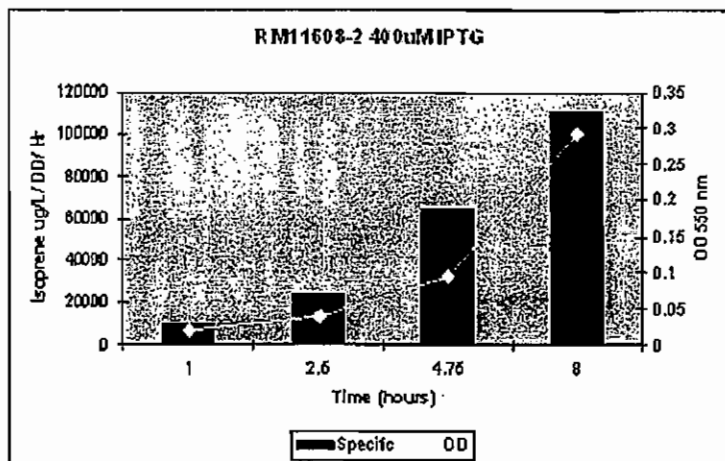
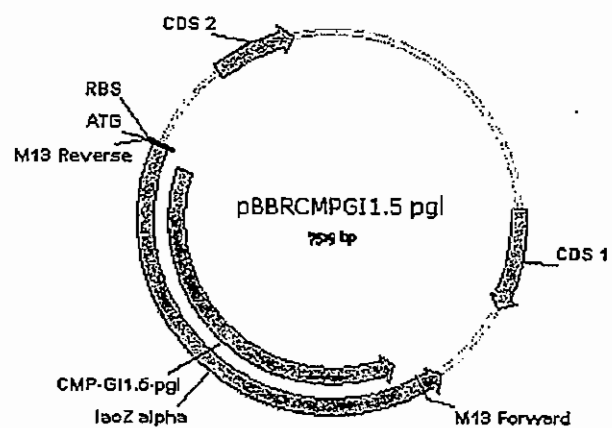


Figure 76



CDS 2: Gentamycin resistance gene; CDS1: E. coli replication protein.

Figure 77A

1-

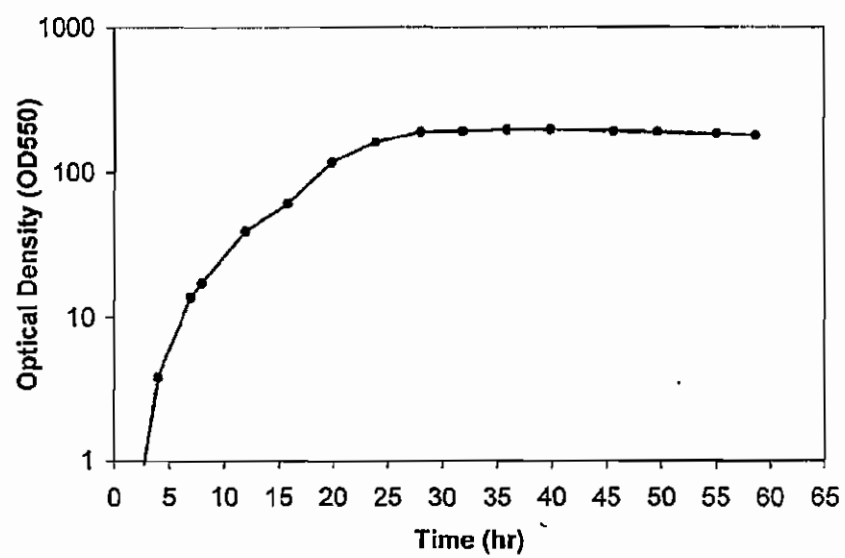
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Figure 77B

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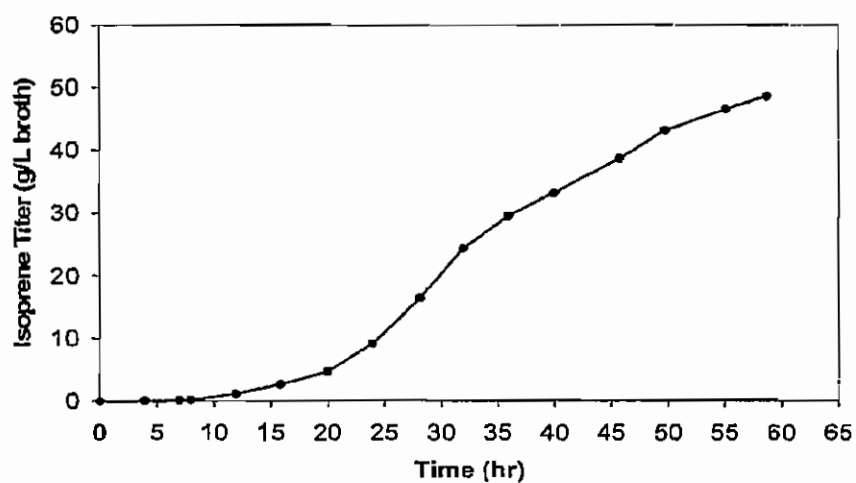
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Figure 78A

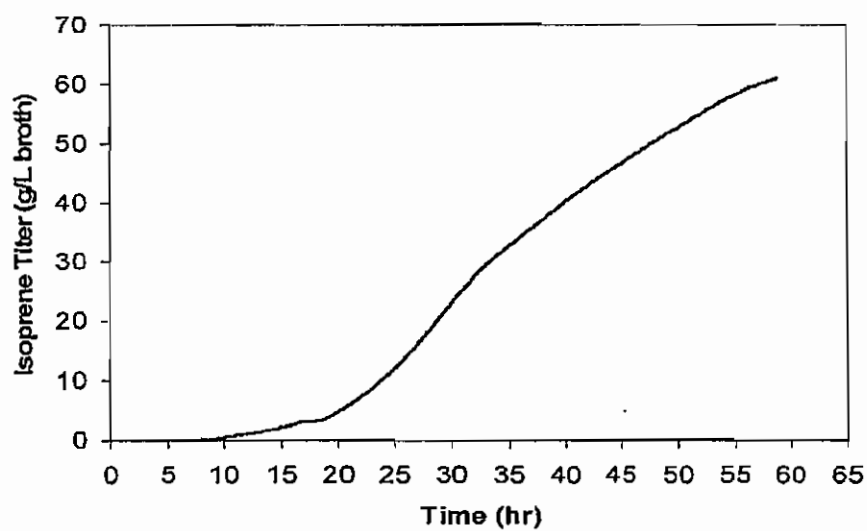


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Figure 78B



Titer 78C



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Figure 78D

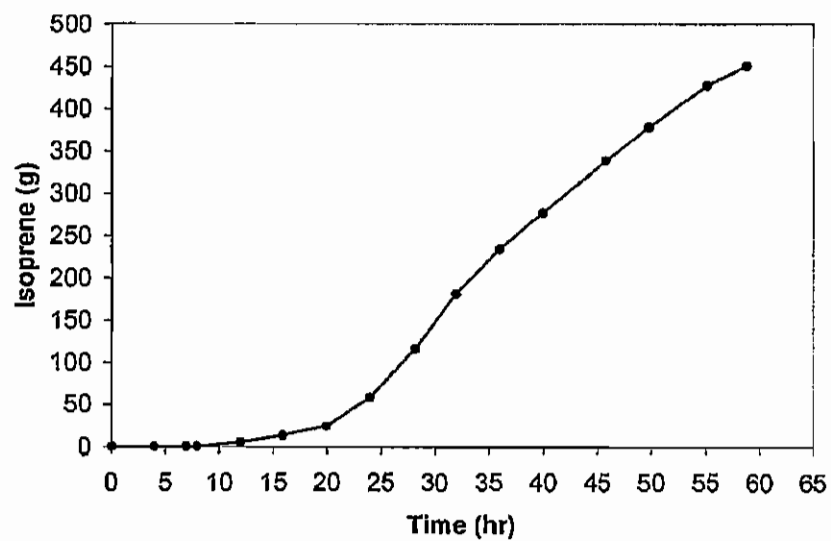
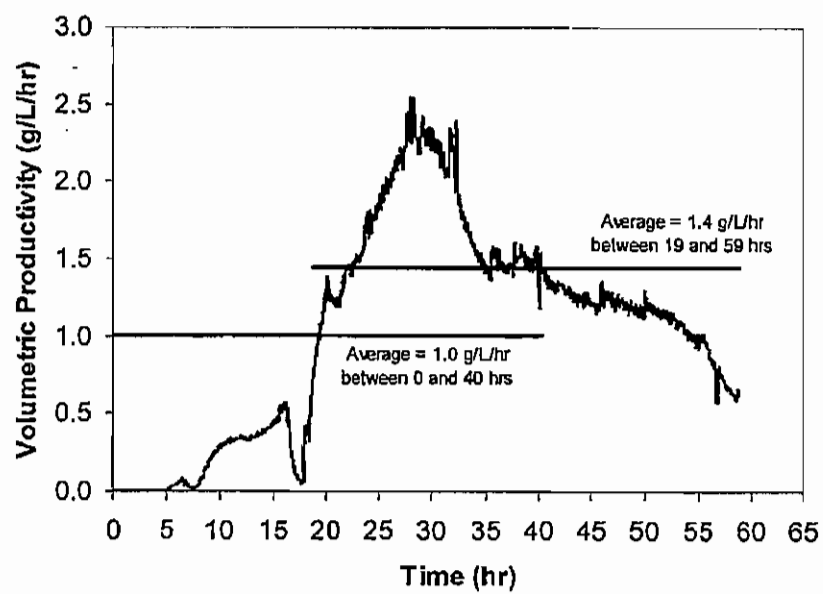
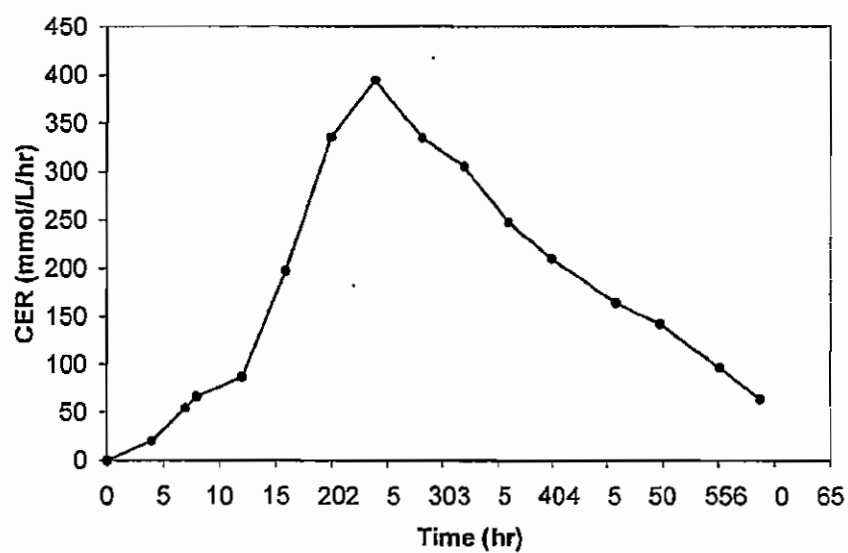


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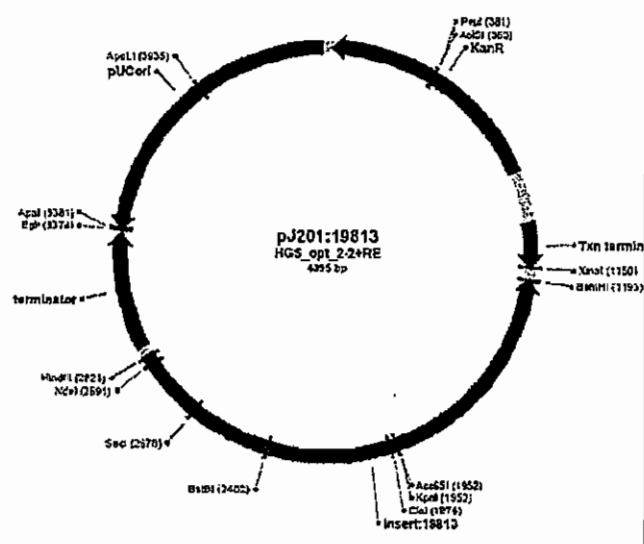
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Figure 78F



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Figure 79A



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Figure 79C

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