

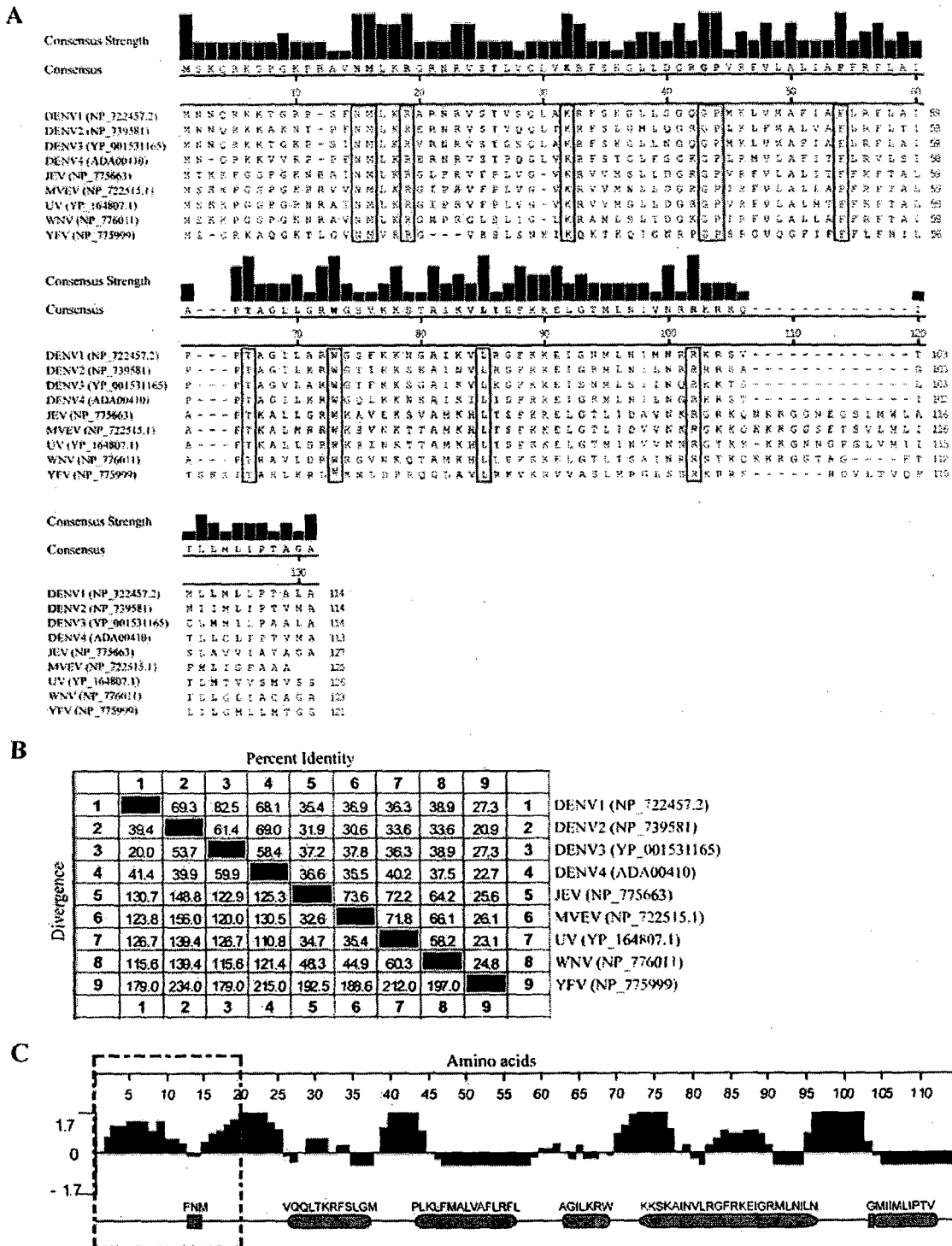


Figure 1

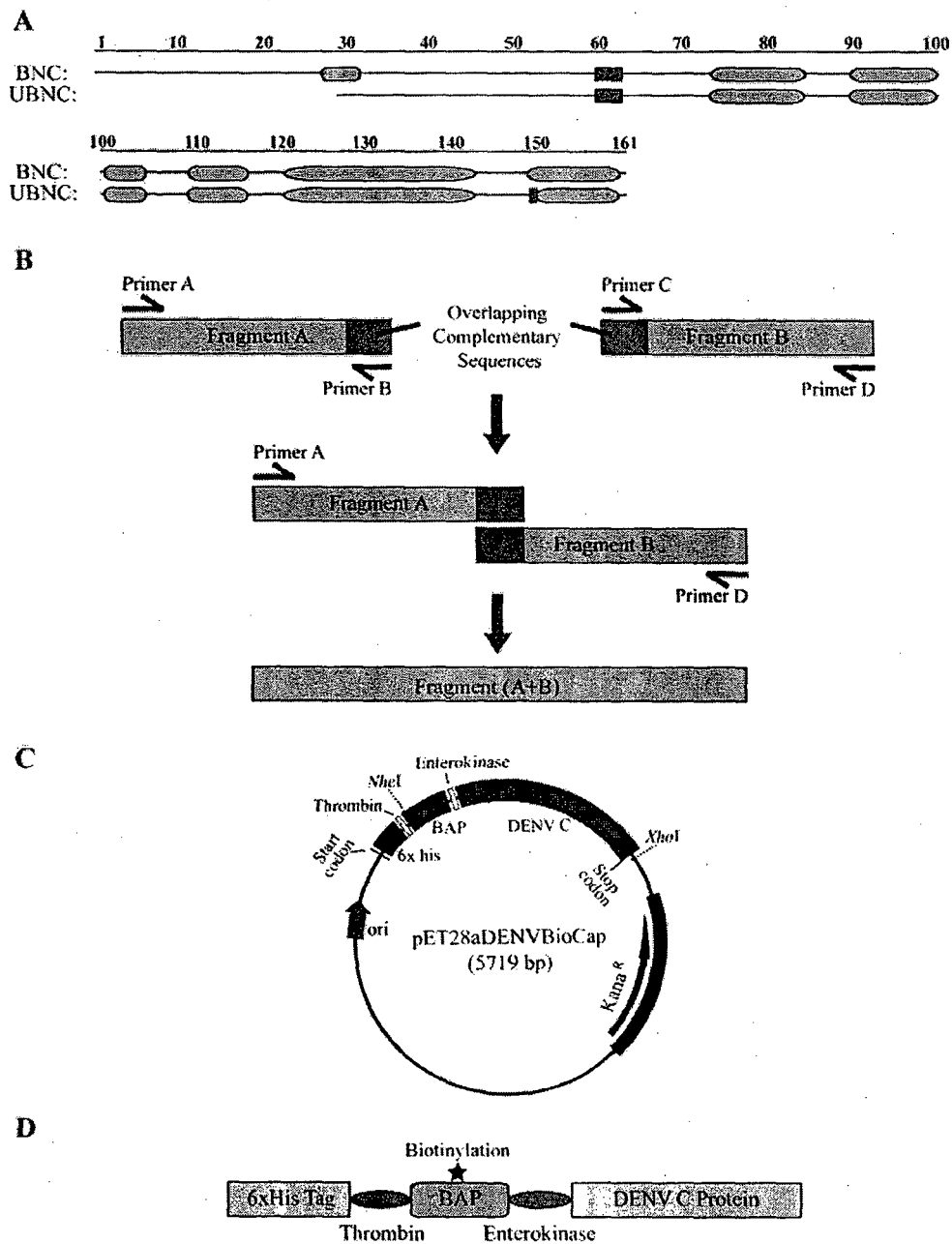


Figure 2

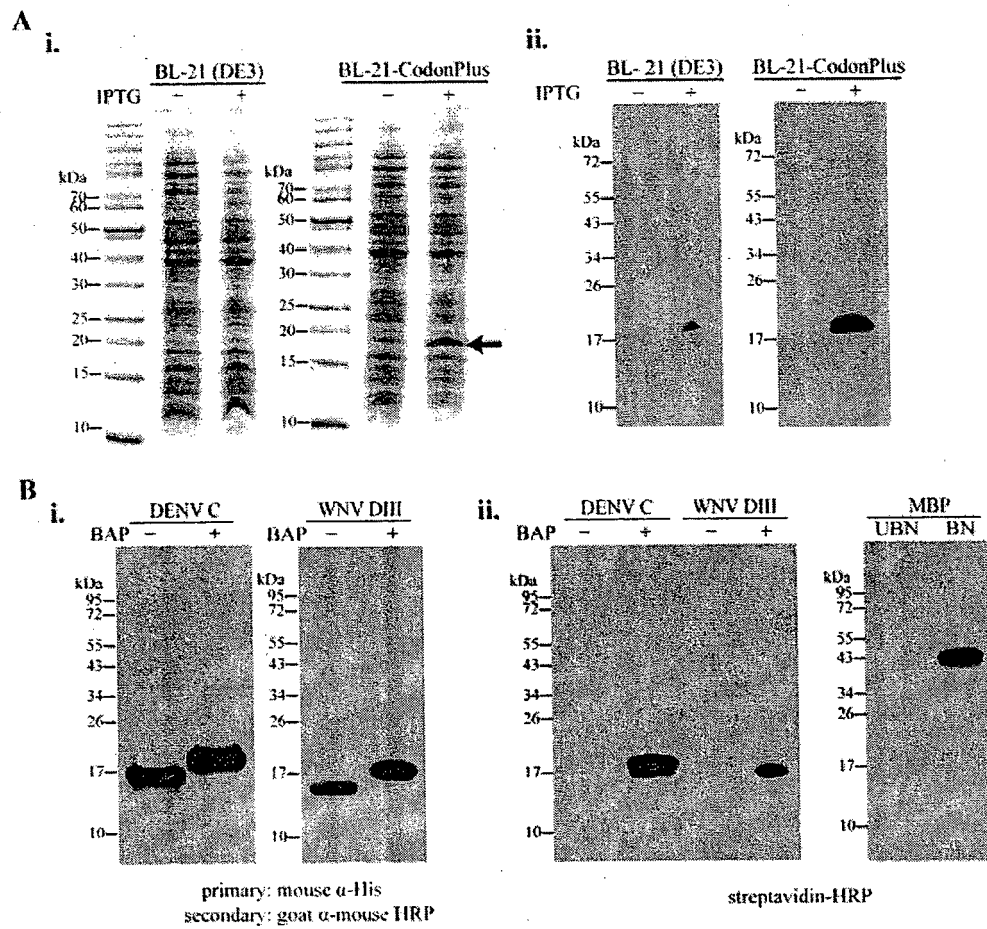


Figure 3

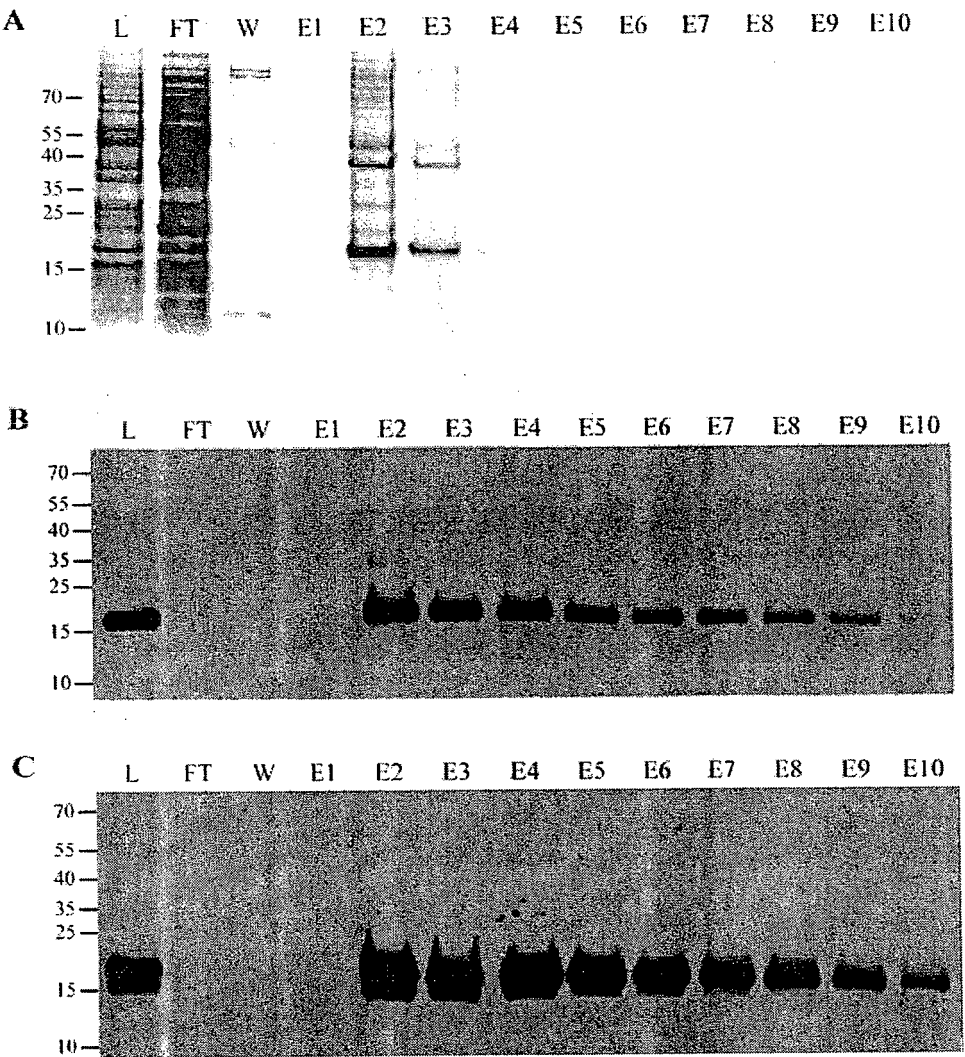


Figure 4

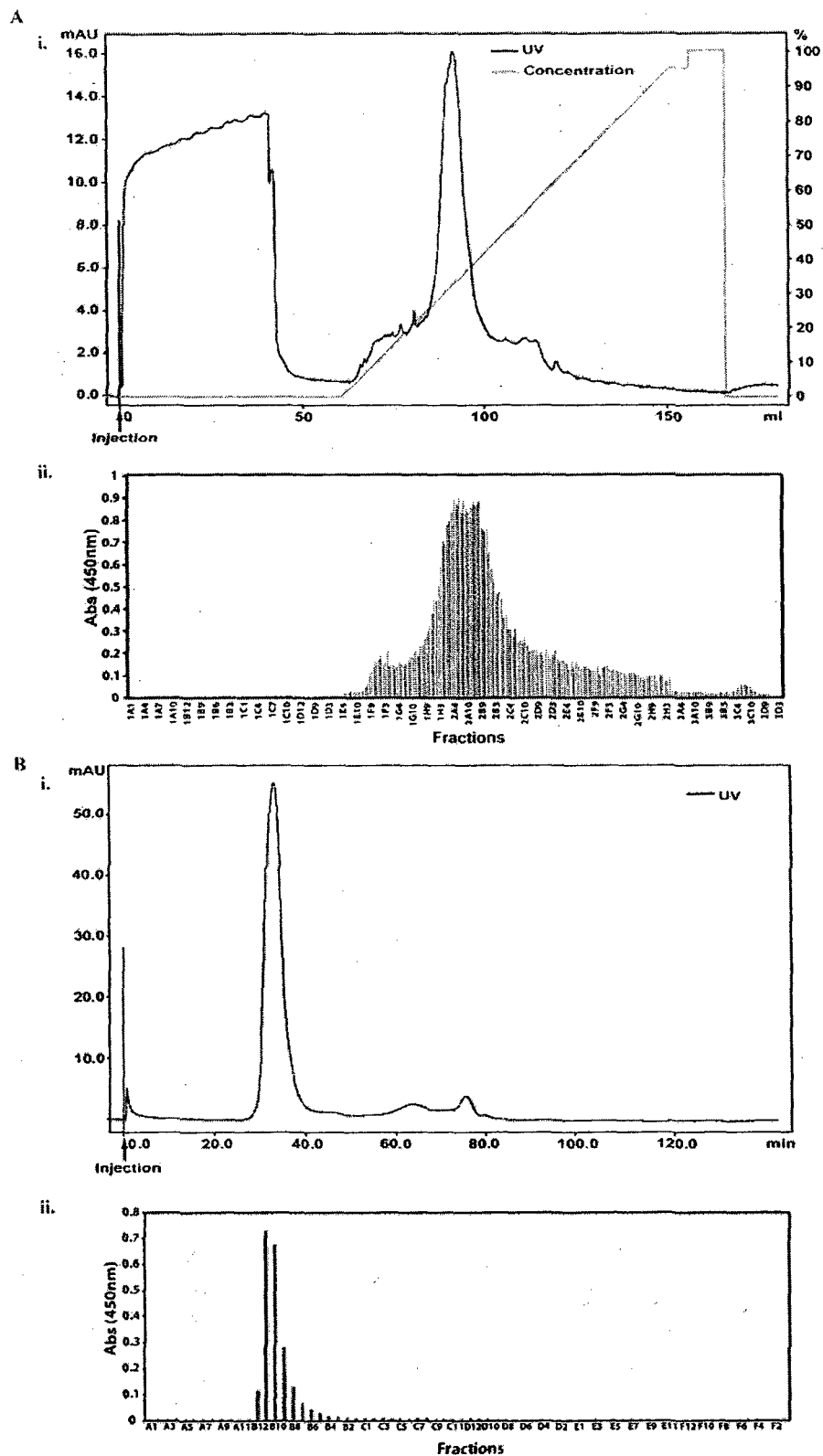


Figure 5

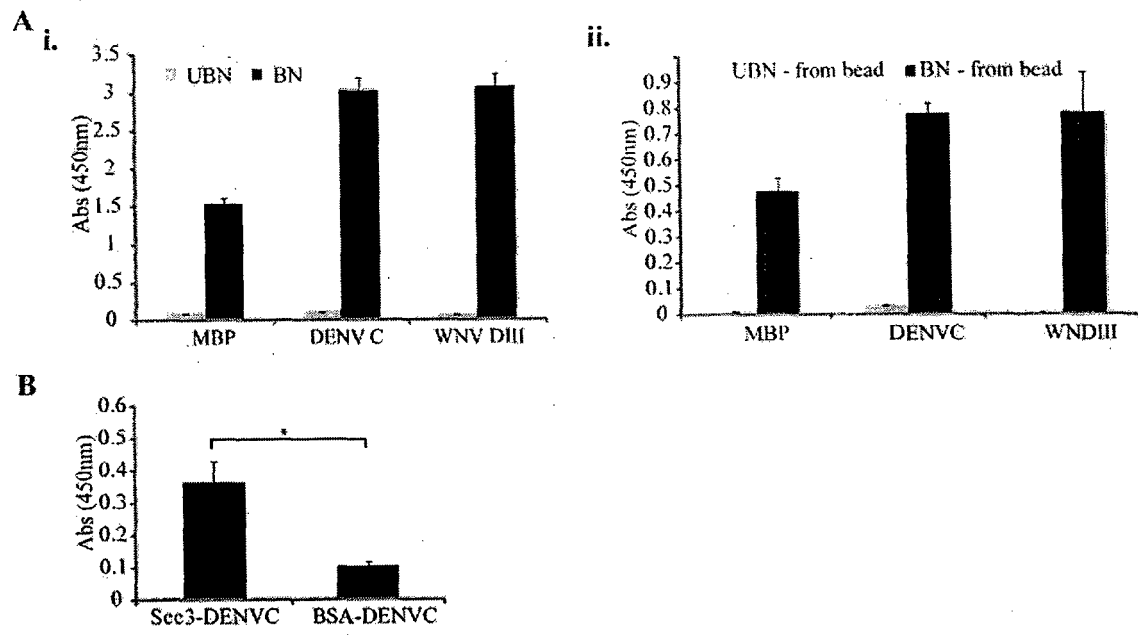
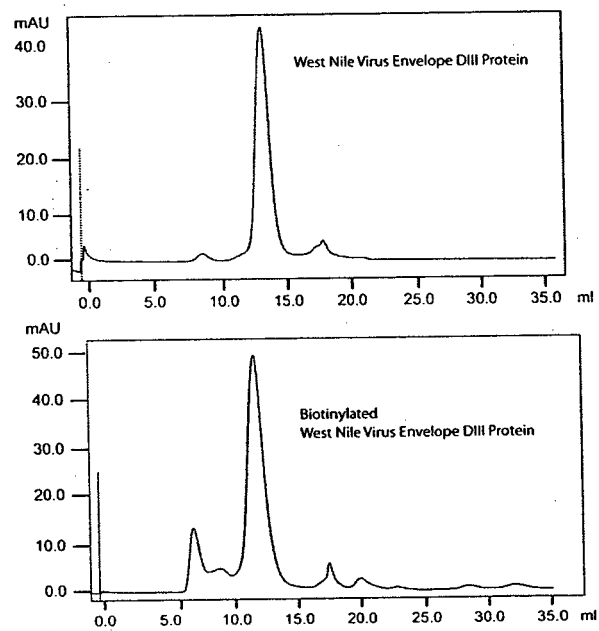


Figure 6

**Figure 7**

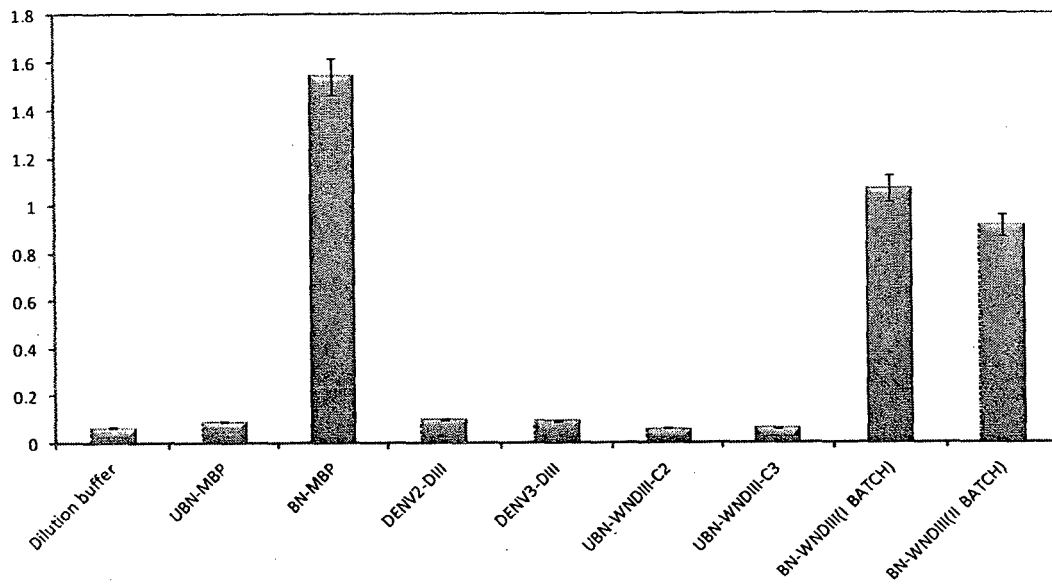


Figure 8

Dengue Virus Full length capsid/
West Nile Virus Envelope Domain III proteins expressed in E.coli

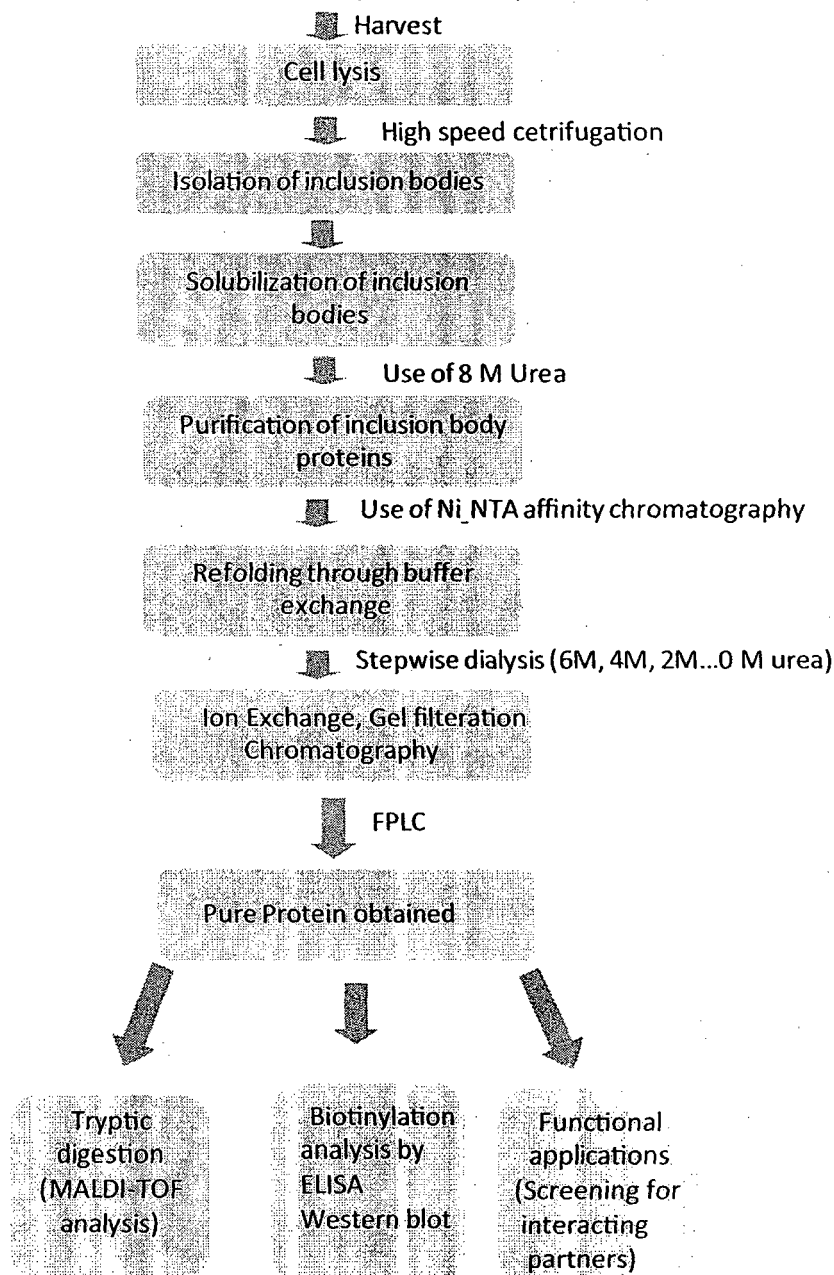


Figure 9

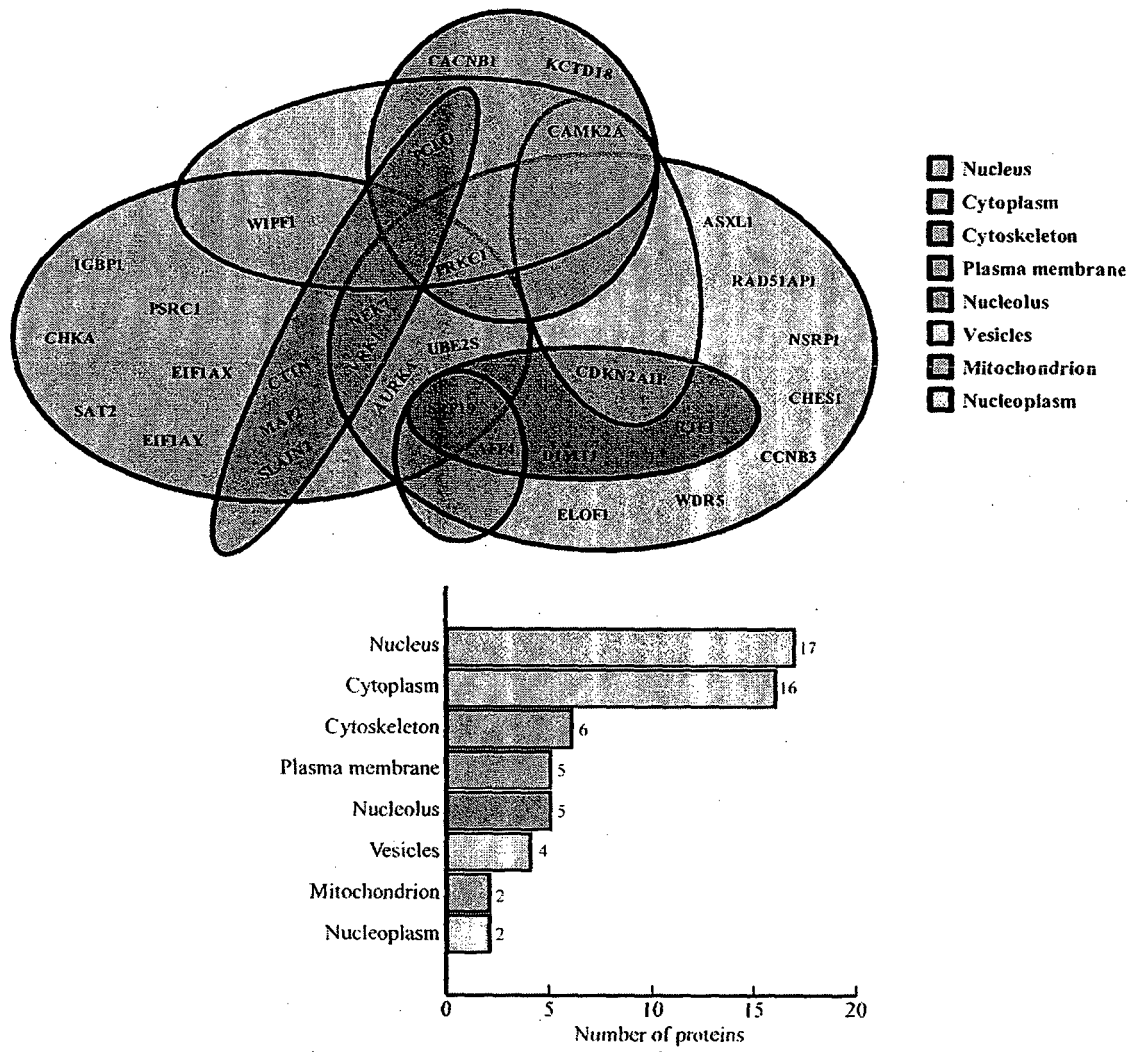


Figure 10

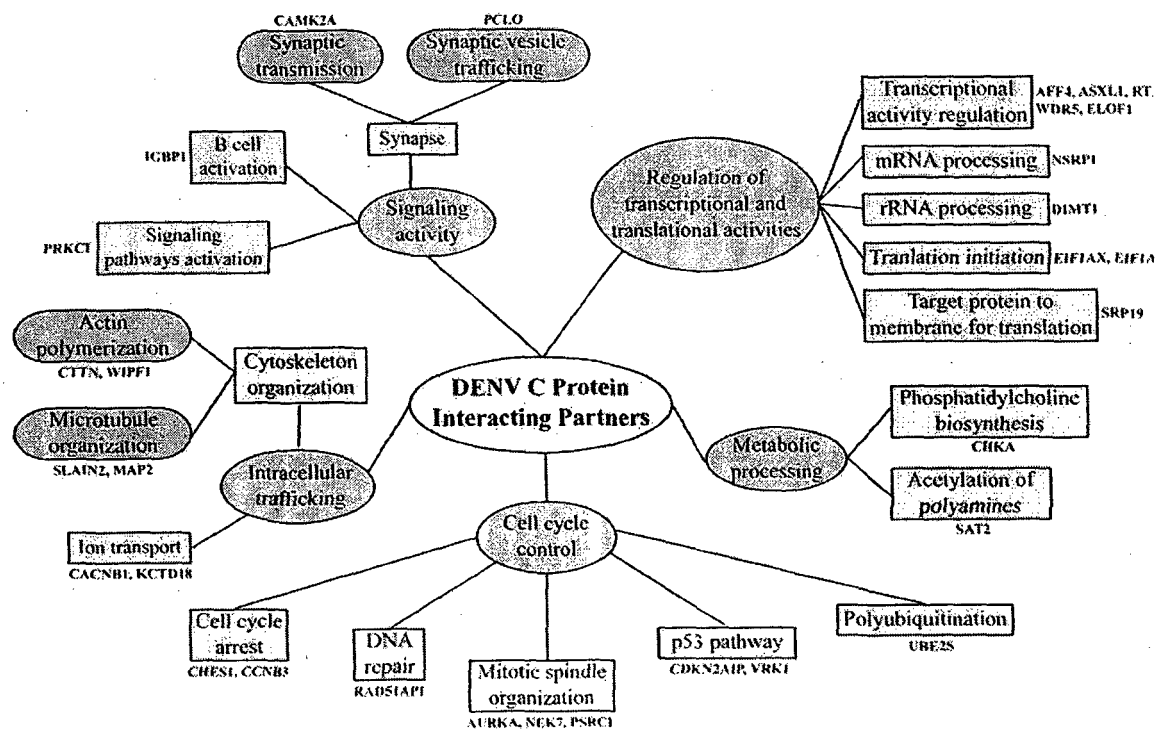
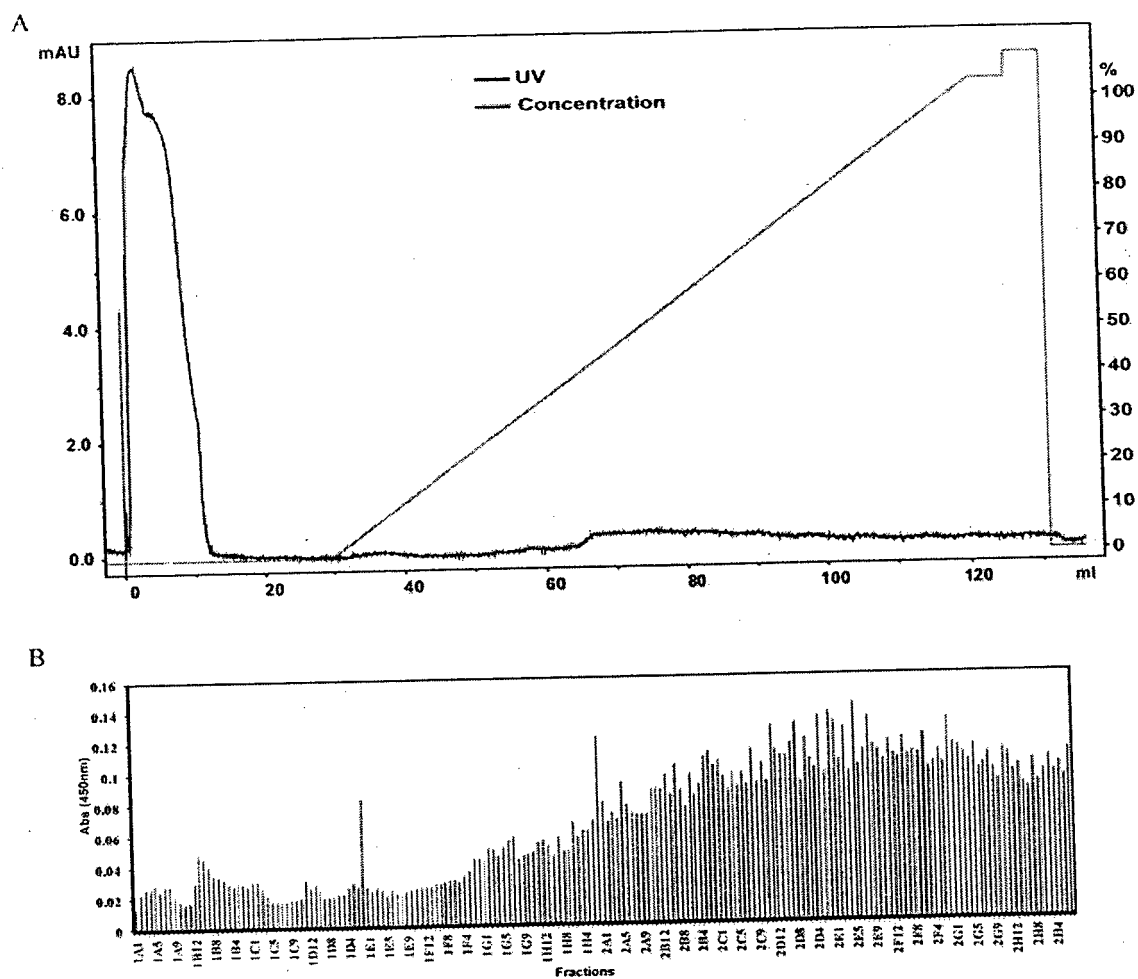


Figure 11

Supplementary Figures and Tables

Supplementary Figure 1

Supplementary Table 1

Constructs	DNA and Protein Sequences
Bacterial- Biotin- DENV C	His Tag atgggcagcagccatcatcatcatcatcacagcagcggcctggtgccgcgcgcgcagccat M G S S H H H H H S S G L V P R G S H Thrombin Cleavage Site
	atggctagctccggcctgaacgacatcttcgaggctcagaaaatcgaaatggcagcaaggc M A S S G L N D I F E A Q K I E W H E G ggcgtgacgacgacaagagc G D D D D K S Enterokinase Cleavage Site Signal Peptide
	atgaataaccaacgaaaaaaggcgagaaatacgcccttc M N N Q R K K A R N T P F aatatgctgaaacgcgagagaaaacgcgtgtcgactgtacaacagctgacaaagagattc N M L K R E R N R V S T V Q Q L T K R F tcacttggaatgctgcaggagcagaggaccattaaaaactgttcattggccctggtggcgcttc S L G M L Q G R G P L K L F M A L V A F cttcgttttcctaacaatcccacacagcaggatactgaagagatggggaacaattaaa L R F L T I P P T A G I L K R W G T I K aaatcaaaagccattaatgttttgagagggttcaggaaagagattggaaggatgctgaac K S K A I N V L R G F R K E I G R M L N atcttgaacaggagacgcagaaactgcaggcatgatcattatgctgattccaacagtgatg I L N R R R R T A G M I I M L I P T V M gcgtaa A - DENV C Protein

Supplementary Table 2

Rare Codon	Number
Arg (AGG, AGA, CGA)	12
Leu (CTA)	1
Ile (ATA)	1
Pro (CCC)	0
Full-length DENV C DNA sequence:	
atg aat aac caa <u>aga</u> aaa aag gcg <u>aga</u> aat acg cct ttc aat atg ctg aaa cgc gag <u>aga</u> aac cgc gtg tog act gta caa cag ctg aca aag <u>aga</u> ttc tca ctt gga atg ctg cag gga <u>aga</u> gga cca tta aaa ctg ttc atg gcc ctg gtg gcg ttc ctt cgt ttc <u>cta</u> aca atc cca cca aca gca ggg <u>ata</u> ctg aag <u>aga</u> tgg gga aca att aaa aaa tca aaa gcc att aat gtt ttg <u>aga</u> ggg ttc <u>agg</u> aaa gag att gga <u>agg</u> atg ctg aac atc ttg aac <u>agg</u> <u>aga</u> cgc <u>aga</u> act gca ggc atg atc att atg ctg att cca aca gtg atg gcg taa	

Supplementary Table 3

Competent Cells	Accession Number	Features
BL-21 (DE3)	AM946981	Bifunctional biotin-[acetyl-CoA-carboxylase] ligase and transcriptional repressor
BL-21-CodonPlus	CP001665	Bifunctional BirA, biotin operon repressor/ biotin--acetyl-CoA-carboxylase ligase

Supplementary Table 4

Identity	Fragment	Peptide Sequence	Calculated (Da)	Measure (Da)	Error (Da)
Dengue virus 2 core protein	81-89	FSLGMLOGR	1007.52	1007.49	-0.03
	104-116	FLTIPPTAGILKR	1425.87	1425.8	-0.07