**Version A2**

* Work with following unknown sequence:

CTCTAAACCTTATGACAGAGCAATTGCAAGATTCTGGGCAGACTTTCTGGACAAGAAGTTTTATGAGGCGGGGGCACGCTTATTAATGAGCAAAGGGGAAGCACAGGAGGAAGCGAAGAGAGATGTAATCGAAAACCTGGGAATAATGGAAGGAGCTCTGAAAGAGGTTTCTGGCGGGAAGCCGTATTTCGGGGGAGAAACGTTTGGATTGATAGATATTGCGTTCATACCGTTTACTGCTTGGTTTCTTACCTACGAAACCCTTGGAAACTTCAAGATATCGTTGGATGAGAAGTTTCCAAGGTTGGGGGCGTGGGCTAAGAAATGTATGGAGAGGAAGAGCGTTAGCACCCGACTGGAAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTCACACAGGAAA

* Find out if there is any vector contamination. - yes



* If yes, get the “purified” sequence and write it down in FASTA format



>purified sequence

CTCTAAACCTTATGACAGAGCAATTGCAAGATTCTGGGCAGACTTTCTGGACAAGAAGTT

TTATGAGGCGGGGGCACGCTTATTAATGAGCAAAGGGGAAGCACAGGAGGAAGCGAAGAG

AGATGTAATCGAAAACCTGGGAATAATGGAAGGAGCTCTGAAAGAGGTTTCTGGCGGGAA

GCCGTATTTCGGGGGAGAAACGTTTGGATTGATAGATATTGCGTTCATACCGTTTACTGC

TTGGTTTCTTACCTACGAAACCCTTGGAAACTTCAAGATATCGTTGGATGAGAAGTTTCC

AAGGTTGGGGGCGTGGGCTAAGAAATGTATGGAGAGGAAGAGCGTTAGCA

* Would be the purified sequence cut by restriction endonucleases HpaII, KpnI or MseI? only Mse I cuts once







* How long is the longest peptide after translation? In which open reading frame (ORF) is it encoded? ORF1 +2 264nt | 87 AA



* From which organism does this sequence likely come from?

Gingo biloba



* Find human sequence of protein named “ICAM1”
* What is the function of the protein and the accession number?

P05362, Function:ICAM proteins are ligands for the leukocyte adhesion protein LFA-1 (integrin alpha-L/beta-2). During leukocyte trans-endothelial migration, ICAM1 engagement promotes the assembly of endothelial apical cups through ARHGEF26/SGEF and RHOG activation.

* How many isoleucines does have this protein? 12 isoleucins



* How many times would be the sequence cut by pepsin (pH1.3)?

PeptideCutter : 85times



* Find mouse homologous sequence, how similar are these two sequences?

67.2%



* Design primers for the detection of the human ICAM1 gene for amplification of the product no longer than 500nt.

(trick question-for this you need to get nucleotide sequence (mRNA-trancript)

