**Version A2**

1. Work with following unknown sequence:

CTCTAAACCTTATGACAGAGCAATTGCAAGATTCTGGGCAGACTTTCTGGACAAGAAGTTTTATGAGGCGGGGGCACGCTTATTAATGAGCAAAGGGGAAGCACAGGAGGAAGCGAAGAGAGATGTAATCGAAAACCTGGGAATAATGGAAGGAGCTCTGAAAGAGGTTTCTGGCGGGAAGCCGTATTTCGGGGGAGAAACGTTTGGATTGATAGATATTGCGTTCATACCGTTTACTGCTTGGTTTCTTACCTACGAAACCCTTGGAAACTTCAAGATATCGTTGGATGAGAAGTTTCCAAGGTTGGGGGCGTGGGCTAAGAAATGTATGGAGAGGAAGAGCGTTAGCACCCGACTGGAAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTCACACAGGAAA

* Find out if there is any vector contamination.
* If yes, get the “purified” sequence and write it down in FASTA format
* Would be the purified sequence cut by restriction endonucleases HpaII, KpnI or MseI?
* How long is the longest peptide after translation? In which open reading frame (ORF) is it encoded?
* From which organism does this sequence likely come from?
1. Find human sequence of protein named “ICAM1”
* What is the function of the protein and the accession number?
* How many isoleucines does have this protein?
* How many times would be the sequence cut by pepsin (pH1.3)?
* Find mouse homologous sequence, how similar are these two sequences?
* Design primers for the detection of the human ICAM1 gene for amplification of the product no longer than 500nt.