

Translate the following sequences and find out what they do:

DNA Sequence 1	atg aag tca gct att tta acc ggt ttg ctt ttc gtc
Translated sequence	M K S A I L T G L L F V
Protein name	Antifreeze Protein Type III
Protein function	Prevents organisms such as Atlantic wolffish from freezing in the icy seawater they live in

DNA Sequence 2	atg agt aaa gga gaa gaa ctt ttc act gga gtc gtt
Translated sequence	M S K G E E L F T G V V
Protein name	Green Fluorescent Protein (GFP)
Protein function	GFP is used by organisms such as jellyfish to communicate with each other. It can also be used by biologists in genetic engineering research as a marker to indicate the successful insertion of genes.

DNA Sequence 3	gaa aac atg gag aac gat gaa aat att gtg tat ggt
Translated sequence	E N M E N D E N I V Y G
Protein name	Luciferase
Protein function	An enzyme used by fireflies to create light in a process called bioluminescence

DNA Sequence 4	ggt tgg gct ttg cgg atc atg ttt cta cat ctg tac
Translated sequence	G W A L R I M F L H L Y
Protein name	Odorant Receptor Protein OR1
Protein function	A special receptor which helps animals such as mosquitoes detect specific chemicals or smells in their environment.

DNA Sequence 5	atg gag ctg gcg gcc ttg tgc cgc tgg ggg tta ctc
Translated sequence	M E L A A L C R W G L L
Protein name	HER2
Protein function	Protein that acts like a molecular switch. When 'on' it instructs cells to divide and grow.

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DNA Sequence 6	cct ggg gag aac cta tgc tat aga aag atg tgg tgc
Translated sequence	P G E N L C Y R K M W C
Protein name	Alpha-bungarotoxin
Protein function	A potent snake venom produced by the 'many banded krait' from south east Asia.

DNA Sequence 7	ccc aga gag atc cag acc gcc gtg aga ctg tta ctc
Translated sequence	P R E I Q T A V R L L L
Protein name	Histone H2B
Protein function	Used to wind DNA up so it can be condensed into chromosomes allowing it to fit inside the nucleus of each cell.

DNA Sequence 8	cca ggt gga gaa aag gag act tcg gct acc cag aga
Translated sequence	P G G E K E T S A T Q R
Protein name	Mucin-1
Protein function	A large protein that forms a protective film on the surface of cells in our bodies for example in the intestines and nasal passages.

DNA Sequence 9	gag aag aga aag ctg ttt atc cgt tcc atg ggt gaa
Translated sequence	E K R K L F I R S M G E
Protein name	Caspase 1
Protein function	An enzyme that destroys cellular proteins leading to apoptosis or programmed cell death.

DNA Sequence 10	atg agt tct gac tct gag atg gcc att ttt ggg gag
Translated sequence	M S S D S E M A I F G E
Protein name	Myosin 1
Protein function	A key protein found in muscle fibres, that is essential for making muscles move.