

A

A WHAT?



PROTEIN?

introducing several key players you'll be meeting in this comic strip

PROTEINS ARE MOLECULES
THAT ARE ESSENTIAL TO
LIFE, FROM BACTERIA
TO HUMANS, AND INSECTS
TO PLANTS

THEY'RE VERY
BUSY...

AND INTERACT
A LOT WITH EACH
OTHER TO KEEP
LIFE GOING

AHH...
LIFE!!



ALL ORGANISMS
HAVE PROTEINS

EVEN
ME?

YES, AND
EVEN THE
INFAMOUS
SEMI-LIVING
VIRUS
THAT'S JUST
ARRIVED

GMARK

MAY I ASK
WHAT YOU'RE
DOING?...

ALOYS?

I'M IMAGINING
A TECHNIQUE
TO REPRESENT
EVERYTHING YOU'RE
GOING TO TELL ME

VIVIENNE

GLOU

LET'S SEE

THERE ARE HUNDREDS
OF BILLIONS
OF PROTEINS

GO AHEAD

SHOW
US!

EASY!

BURP

PRETTY
SCANT, YOUR
REPRESENTA-
TION...

BUT YOU
GET THE
IDEA

NO?

PROTEINS LOOK AFTER
EVERYTHING: OUR IMMUNITY,
MOLECULAR TRANSPORT,
OUR BREATHING, OUR
DIGESTION AND EVEN...

...THE
SMELL OF OUR
WASHING
POWDER

AND YET THEY'RE
REALLY VERY SMALL

A MILLION TIMES
SMALLER THAN THIS
GRAIN OF POLLEN

AAAAATCHO

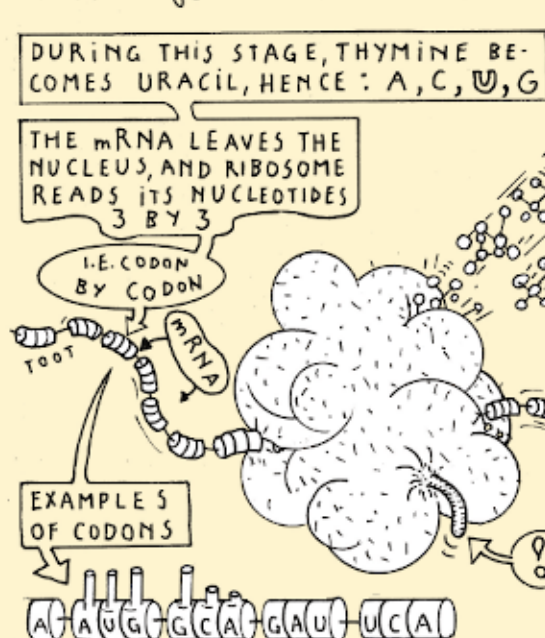
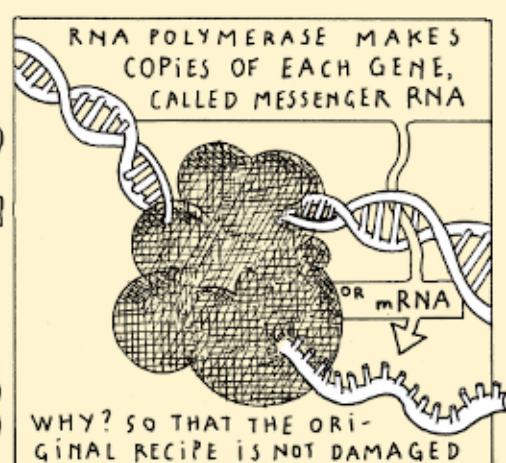
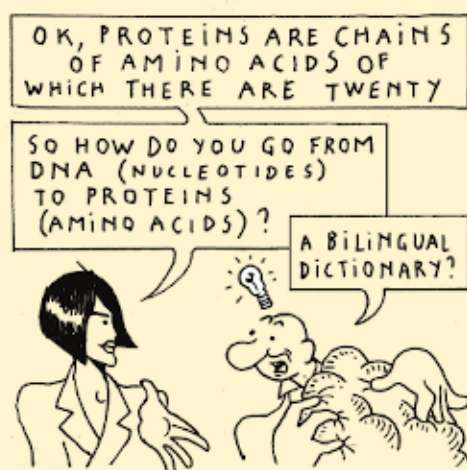
TINY PERHAPS!
BUT WHERE DO
THEY COME FROM?

ALL THESE LITTLE PROTEINS

I KNEW YOU'D
ASK ME THAT

CAN I JUST
BORROW ONE OF
YOUR HAIRS...



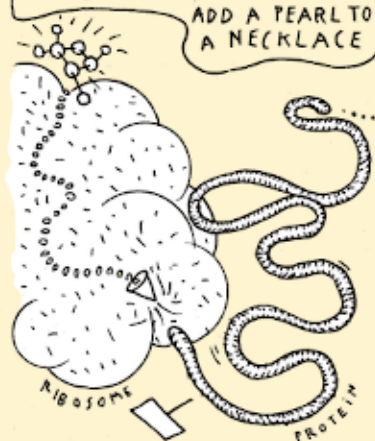


RIBOSOME ADDS EACH AMINO ACID TO THE NASCENT PROTEIN, MUCH IN THE WAY YOU WOULD ADD A PEARL TO A NECKLACE

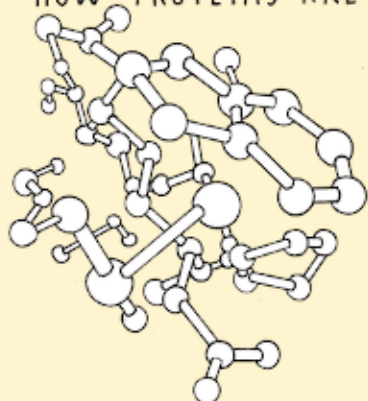
THE MOMENT RIBOSOME READS «END» ON A CODON, THE PROTEIN IS RELEASED

AND SPENDS A BRIEF MOMENT FOLDING CORRECTLY IN 3D

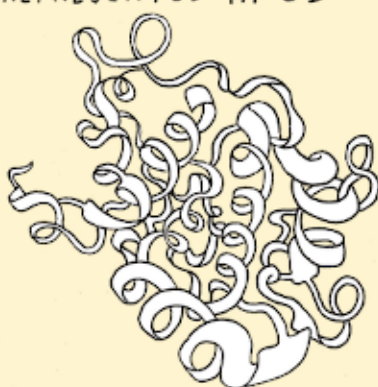
AND THAT'S VERY IMPORTANT BECAUSE A PROTEIN'S FUNCTION DEPENDS ON ITS 3D STRUCTURE!



HOW PROTEINS ARE REPRESENTED IN 3D



BALL & STICK MODEL



RIBBON MODEL



SURFACE MODEL



ALOYS LOLO'S MODEL

I'M NOT FEELING MYSELF TODAY

IF A PROTEIN IS NOT WELL, IF ITS RECIPE HAS BEEN ALTERED, IT MAY BECOME TOO ACTIVE OR NOT INTERACT ANYMORE

OR MAYBE PRODUCED IN TOO LARGE OR TOO SMALL A QUANTITY: IN ALL CASES YOU GET SICK

IN WHICH CASE, AS SHOWN BELOW, I'LL GIVE YOU SOMETHING TO RESTORE THE DEFECTIVE PROTEIN'S FUNCTION

IN THAT CASE IT HAS A 3D PROBLEM



PROTEIN WITH PROBLEM

MEDI-CATION

WE'LL EXPLAIN THIS BETTER LATER

FRANKLY, I WASN'T EXPECTING THIS...

BUT I MUST ADMIT I ENJOYED YOUR WAYS OF REPRESENTING ALL THESE COMPLICATED CONCEPTS AND THINGS

LIFE, IN FACT...

AHH... LIFE!!

LOOK!

I MANAGED TO MAKE A RABBIT, VIV!

HERE, FOR YOU, TO THANK YOU FOR YOUR KIND WORDS!

