



BACK FROM THE CINEMA...

...JUST IN TIME!

PERPETUATE

NOW... NOW...

OH LEAVE HIM

FINALLY SOME ACTION!

NOTHING LIKE WHAT WE'VE JUST SEEN AT THE CINEMA

42, AND THE MEANING OF LIFE

MIDDLE EARTH AND THE ONE RING

HAMLET'S OTHER QUESTION

SCRABBLE VERSUS GAME OF THRONES

FLOCCINAUCINIHILOPILIFICATION NEXT TO OUR FILM!

IT'S ALL ABOUT A SINGLE-CELLED MARTYR

...IN THIS INSTANCE, HARMLESS AND WHICH BELONGS TO OUR MICROBIOME

THE MICROBIOME IS A COLONY OF 10¹³ ORGANISMS AND HAS A CRUCIAL ROLE IN OUR METABOLISM

I THINK I KNOW WHO IT IS!

DESPITE AN UNCANNY RESEMBLANCE TO A CHEESE PUFF



ESCHERICHIA COLI IS A LAB STAR

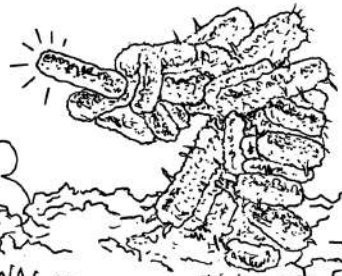
THAT'S E. COLI, OUR HERO!!!

SHHH

QUIET

SHHH

A PROTEIN SPOTLIGHT & STUDIOS LOLOS SUPERPROD



« EVERYTHING WAS CALM THAT DAY, AS THE COLONY... »

VOICE OVER

E. COLI IS MUCH APPRECIATED BECAUSE ITS ARCHITECTURE IS SIMPLE AND IT DIVIDES WITHIN 20 MINUTES, AT 37°C

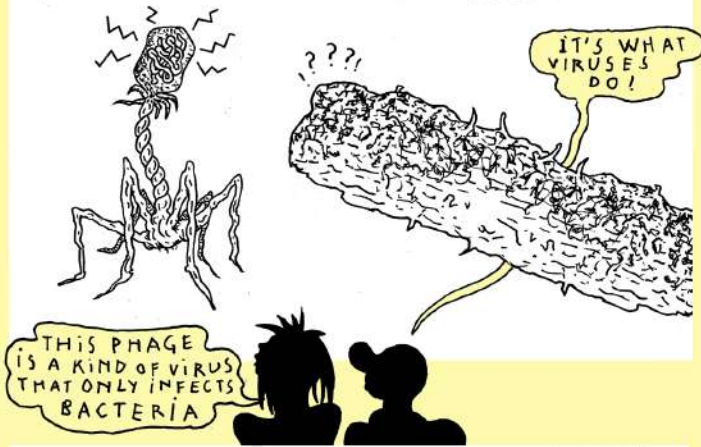
NICE

NO?

« ...ROCKED GENTLY IN THE MIDST OF A RATHER HUMDRUM MICROBIOME... »

... SMALL SACRIFICE

«ON THE LEFT OF THE SCREEN, A BACTERIOPHAGE ABOUT TO INFECT *E. COLI*»



THIS PHAGE IS A KIND OF VIRUS THAT ONLY INFECTS BACTERIA

???

IT'S WHAT VIRUSES DO!

«ON RECOGNISING THE VIRUS, *E. COLI* SETS OFF ALL SORTS OF ALARMS TO LAUNCH AN IMMUNE RESPONSE THUS SAVING THE REST OF THE COLONY!»



OH MY GOD!
A MARTYR!

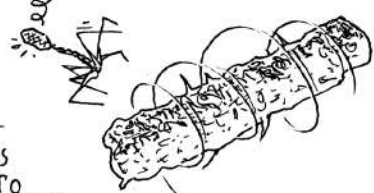
«THE STRATEGY IS KNOWN AS CBASS»

AH YES!

CBASS! CYCLIC OLIGONUCLEOTIDE-BASED ANTIPHAGE SIGNALING SYSTEM

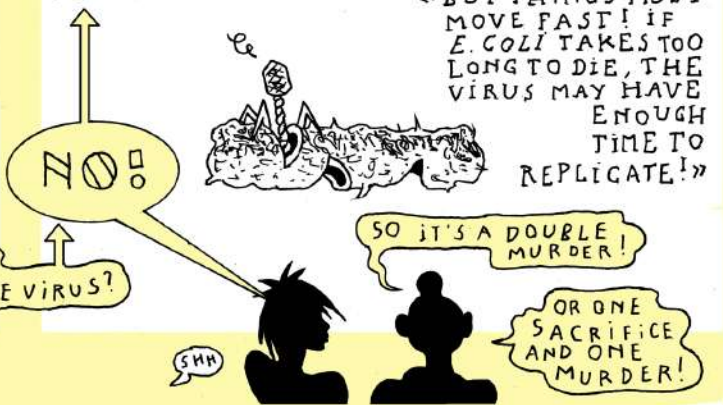
«*E. COLI* ACTIVATES A PROTEIN, A CYCLASE: CYCLIC GMP-AMP SYNTHASE WHICH GENERATES CYCLIC MOLECULES USING TWO OR THREE NUCLEOTIDES (THE BASIC UNIT OF NUCLEIC ACIDS, LIKE DNA FOR EXAMPLE).»

«THESE VERY ENERGETIC LITTLE MOLECULES ACTIVATE DOWN-STREAM PROTEINS WHOSE ROLE IS TO KILL *E. COLI*»



«BY CAUSING THE INFECTED *E. COLI* TO COMMIT SUICIDE, THE VIRUS IS UNABLE TO MULTIPLY AND PERPETUATE!»

«BUT THINGS MUST MOVE FAST! IF *E. COLI* TAKES TOO LONG TO DIE, THE VIRUS MAY HAVE ENOUGH TIME TO REPLICATE!»



NO!

SO IT'S A DOUBLE MURDER!

OR ONE SACRIFICE AND ONE MURDER!

I TOLD YOU!

SHOULDN'T WE BE MORE WORRIED ABOUT THE VIRUS?

SHHH SHH

SHH

HOW DO PROTEINS KILL BACTERIA?

BY PERFORATING THEIR MEMBRANE

OR BY DESTROYING THEIR DNA

THERE ARE MANY WAYS OF PUTTING AN END TO LIFE

BRRR



THANK YOU

THANK YOU

WHAT BRAVERY!

ARTISTICALLY, THAT WASN'T TERRIFIC

BUT THE SCRIPT WAS FASCINATING!

AND VERY INTERESTING! I HASTEN TO ADD THAT STUDYING THE INTERACTIONS BETWEEN BACTERIA AND THEIR VIRUSES HAS REVEALED MANY DIFFERENT IMMUNE STRATEGIES

WONDERFUL NEWS!

WHICH IS PROMISING FOR FUTURE ADVANCES IN CONTEMPORARY MEDICINE!

TO CONGRATULATE YOU ON THE CRYSTAL CLARITY OF YOUR CINEMATOGRAPHIC ACCOUNT, HERE'S A WELL-DERIVED REFRESHING DRINK!

