

# YOUNG SCIENCE

## Communicators Competition

INDIGENOUS LANGUAGE

WINNER

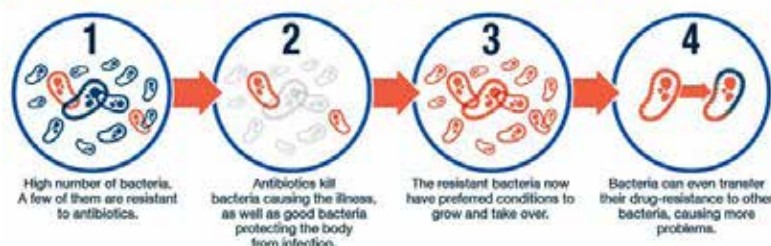
### UBUKRELEKRELE BE NDALO-AKUL AHLWA MBELEKO NGAKUFELWA Chwayita Ncedana

Ukhe weva na nge ntetho ethi “isininzi siyalawula”. Xa ndingathi thekelela, ingaba loluphi uhlobo lwendalo oluninzi. Ingaba ngabantu, uhlobo oluthile lwezilwanyana okanye izinambuzane. Ndiyacinga ukuba awukhumbulanga ngohlobo lwendalo olungabonakali ngeliso lenyama. Oluhlobo lubizwa ngesingesi ukuba zi-microorganisms. Mhlawumbi ungangazazi ngalendlela, okanye ngeligama. Kodwa uyazi kwantlandlolo ukuba, ubisi xa lubekwe elangeni lujika libengamasi, kwaye ukhe wanambitha i-yoghurt okanye umqombothi, ndingazibala zibeninzi izinto ezikuhlobo lokutya okwenziwa ngumsebenzi wee-microorganisms. Ukhe wacinga ngezinto ezidala ukubolisa ukutya, ikwazizo ii-microorganisms. Ukuba ungakhumbula kulonyaka bekuthe lwale ukugula, de kwasweleka inani elingapha kwekhulu, okukubangelwa yi-listeriosis, sade sancama oo-polony, wena russian ngenxa yelintiyosisi (ngabula thina xabesizamana neligama).

Oluluhlu olukhankanywe ngentla, zezo zinento kwenza nokutya, kodwa ke kwa kwezi-microorganism, kukhona ezingunobangela wezifo. Uyazi ukuba kuvamile ebusika ukuxhaphaka kwemikhuhlane, intsholongwane eyandulela ugawulayo kwaye kutsha nje ezindabeni bekwaziswa ngobhubha kwentsana kwisibhedlele sase Mzantsi Afrika zihlaselwe luhlobo lwe-microorganism olubizwa i-klebsiela olungasavi machiza into ebizwa i-antibiotic resistance. Olunye uhlobo lwezi-microorganisms ezinganyangeki ngamachiza akhoyo, ziquka isifo sephepha, i- TB ukutsho, ekuthwa yi-MDR (multidrug resistant)-TB, kunye ne-XDR (extensive drug resistance)-TB. Ezi zinkunzi malanga ezingeva nyango, zaziwa ngokuba azinyangeki ngamachiza akhoyo de lowo othe wahlaselwa, azibone esenziwa ikheswa, lento kuthwa quarantine. Xa ubani athi ahlaselwe ngoluhlobo, ubakwimfazwe engenasiqabu, ubungatsho.

Ingaba yintoni lento kuthwa yi-antibiotic resistance? Ezinye izinto kunzima ukuziguqulela ngqo kwintetho yethu-IsiXhosa. Ngoko ke ndizokuzama ngomzekeliso. Imbali ithi, amazwe ngamazwe ebesa kuqubisana, ukuze elo linamandla liphumelele. Ilizwe ke eloyisiweyo ligoduke libe lilahlekelwe ngamajoni amaninzi kwimfazwe leyo. Bekukhe kwenzeka ke ukuba ilizwe eloyiswayo, liyoqeqesha elogcuntswana liseleyo, ngakumbi, lithi lisakuba nobunganga, xa kufika utshaba luzokuhlasela libe lixhobe lafohlela. Limangale elo belisakuphumelela lemfazwe ukuba kuyakanjani abo besibahlasela siboyise, basigunyele emfazweni. Kunjalo ke nokudaleka kwe-antibiotic resistance (khangela ifoto yokuqala). I-antibiotic iqala kakuhle ikwazi ukuyitshabalalisa ithi nya intsholongwane. Ukuze emva kwexesha intsholongwane ibenamadla.

#### How does antibiotic resistance occur?



Ifoto yokuqala: Umzekeliso obonakalisa ukudaleka kwe-antibiotic resistance.

Ithathwe kwi khasi le-internet: <http://www.thepanamanews.com/2018/01/high-levels-of-antibiotic-resistance-found-worldwide/>

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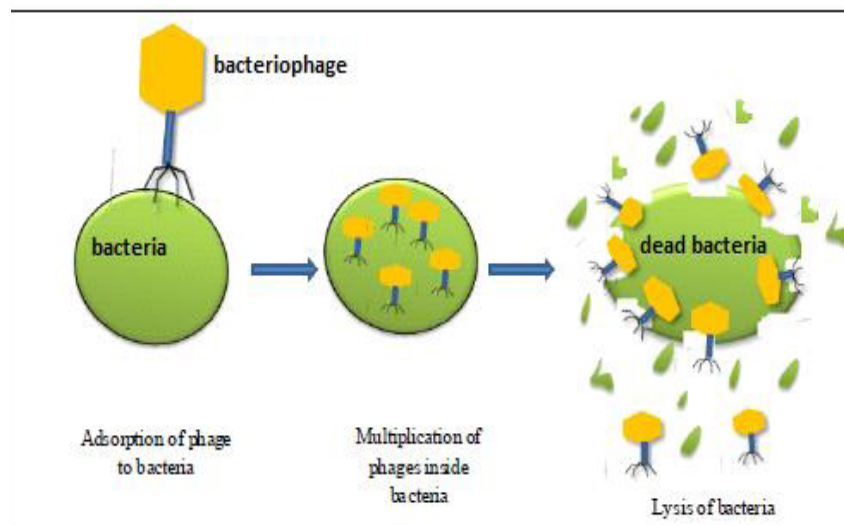
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Lamandla entsholongwane, okanye i-antibiotic resistance abangelwa zizinto ezininzi, eziquka, indle ezithi zisetyenziswe ngazo ii-antibiotics, umzekelo ukunyanga umkhuhlane ngee-antibiotics kwakunye neendlela ezisetyenziswa ngazo kwezolimo, nakwizilwanyana (kuquka kwintlanzi).

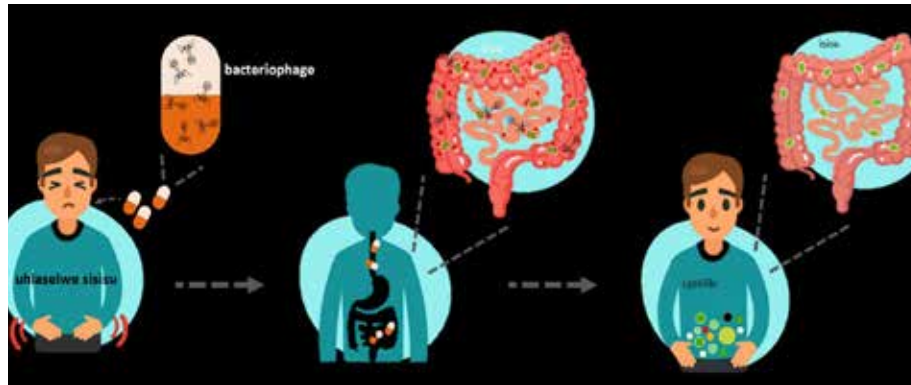
Mvanje, kusuke kwanda ukuxhaphaka kwee ntsholongane ezinganyangekiyo. Lento idala uloyiko nokuthi ubathi angathi aphose kwitawula xa athe wahlaselwa loluhlobo lwentsholongwane.

It is not all lost, atsho amaNgesi. Akulahlwa mbeleko ngakufelwa. Likhona ithemba ngokuba indalo ikrele-krele. Iintsholongwane ezikuhlobo lwee-microorganisms ekuthwa yi-bacteria zinotshaba lwazo nazo kwalapha koluluhlu lwee-microorganisms. Oluhlobo lubizwa i-bacteriophage. Zithiywe ngokomsebenzi wazo, ukuba “zitya i-bacteria” okanye zihlasela zitshabalalise i-bacteria ngokuthi ziqhekeze ukokhiwa kwazo (khangela ifoto yesibini). Ngenxa yokwanda kwe-antibiotic resistance, oo-somachiza bayazama bakhangela ii-bacteriophages ezingatshabalalisa ezintsholongwane zi-antibiotic resistant. Eliphulo likumazwe ngamazwe. Akuyi kubakudala kakhulu, ii-venkile ezithengisa amayeza zizokuzala imixube ene-phages (khangela ifoto yesithathu). Iphulo ke liphumile ukukhangela ngobuxhaka-xhaka boo-somachiza ezi-bacteriophages ezingaba luncedo ukunyanga ezi-antibiotic resistant genes.



Ifoto yesibini: Le foto ingasentla ibonisa ukusebenza kwe-bacteriophage kwi-bacteria. Ithathwe kwi khasi le-internet: <https://scialert.net/fulltextmobile/?doi=ajava.2015.708.723>

Gqaba-gqaba nje ngee-bacteriophages-kwindalo yonke ekhoyo emhlabeni, ii-bacteriophages zinqenqeza phambili ngamanani. Singathi zilawula ngobuninzi bazo. Zikho kwindawo yonke. Kangangobuninzi bazo, ude athi omnye umbhali zingaqikeleleka kwiinkulungwane eziphinda, phindiweyo. Xa besinothelekiswa nazo ii-bacteriophages thina bantu, sikha phantsi, siligcuntswana nje elingephi. Nakubeni zingabonwa ngeliso lenyama, ososayenisi bayakwazi ukusebenzisa ubukhakaxhaka (obubonisa kude, i-microscope) ukubona inkangeleko yazo, ukuze kusetyenziswe kwa-ezinye indlela zoo-sosayenisi ukufunda kabanzi ngobomi bazo nendlela ezithi zihlasele ii-bacteria ngazo.



*Ifoto yesithathu: Le foto ingasentla ibonisa okunokuthi kwenzekwe kogulayo onokuthatha umxube one-bacteriophages. Ithathwe kwi khasi le-internet: <http://2018.igem.org/Team:Nottingham/Project>*

Xa ezi-bacteriophages zilinani elininzi, kwaye zinako ukunyanga izigulo ezidalwa yi-bacteria kubalulekile ukwenza uphando ngazo, sizazi ukuze sizisebenzise kwezempilo zanamhlanje, njengakumazwe aphuhlileyo. Ngoko u-Mzantsi Afrika, nawo, ungathi ungenelele kwiphulo lokukhangela kwindalo kubukrelekrele bendalo bendalo ukuze yoyise i-antibiotic resistance. Nakubeni ii-antibiotics zibonakala zisoyisakala, malingapheli ithemba ngoba akulahlwa mbeleko ngakufelwa, ubukrelekrele bendalo buphethe isisombululo.

## About Chwayita



*Chwayita Ncedana is from a rural town, Ngcobo, in the Eastern Cape. Her background is in Biotechnology and Agricultural Sciences and she spent the last three years at the University of the Western Cape doing research on hot spring bacteriophages and their hosts (bacteria).*

*The message that Chwayita would like to convey is that the science pot is brewing answers for societal problems, and nature is often the source of these answers.*

*She introduces the topic of bacteriophages as possible solutions to growing antibiotic resistance. She says, "My wish is for the reader to be introduced to the basics of bacteriophages and their application in phage therapy, and from there continue personal research to be empowered."*