

# **Allicin - Nature's Antibiotic**

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From the heart of garlic

# The History of Garlic

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- Garlic originated in Siberia and was imported by the Egyptians to feed and protect the workers who built the pyramids
- Every culture in the World has revered garlic as a great food, spice and medicine
- In ancient India garlic was called Mahushuea and was thought to be "god like"

# The History of Garlic

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- Garlic bulbs were found in Tutankhamen's tomb – he was buried in 1352 BC
- In ancient times garlic was used as a tonic, a remedy for skin disease, loss of appetite, dyspepsia, anorexia, cough, rheumatic conditions, abdominal disease, boosting the immune system, and as an aphrodisiac
- The Greeks believed garlic gave great strength and an ability to “win”

# What's in garlic that makes it so powerful?

- Garlic contains a wide range of vitamins and minerals and an amino acid called "alliin" and an enzyme called "alliinase"
- When harvested garlic has no smell but it contains a very potent defence mechanism that starts when garlic is cut, cooked, boiled, chopped, fried or mechanically processed in any way



Now for the smelly bit!

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Let's make some Allicin  
Crush some fresh garlic

# Allicin produced from fresh garlic

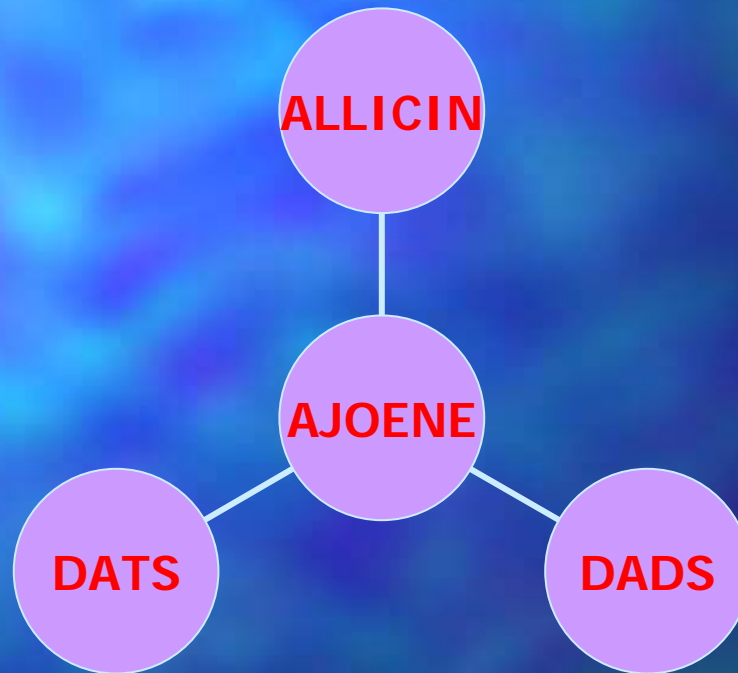
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# Components of Garlic



# Allicin the "Mother" substance



THIOSULPHINATE COMPOUNDS  
FORMED WHEN ALLICIN BREAKS  
DOWN ARE ALSO BODY ACTIVE



# Historical properties of garlic that can be attributed to allicin

- Anti-bacterial - wide spectrum of sensitive bacteria both gram positive and negative
- Anti-viral (including common cold virus)
- Anti-fungal (more effective than many drugs)
- Anti-cancer (IOWA women's study)
- Anti-cholesterol (substantial data)
- Anti-blood pressure (substantial data)
- May reduce blood sugar levels
- May help to reduce fat build up and lead to loss of weight

# Types of Garlic supplement

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- Garlic oil capsules – no allicin potential
- Aged garlic extract – no allicin potential
- Garlic macerates – some allicin potential?
- Garlic powder – potential depends on processing
- Garlic powder easily inactivated by stomach acid
- Pure allicin powder supplements like Allimax are now available

# A revolutionary new supplement

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- Until recently allicin has only been produced in small quantities for research only
- Until now allicin has only been generated in some garlic powder products
- Until now only allicin derivatives can be found in garlic oil capsules
- Until now supplement efficacy depends on enzyme conversion of alliin to allicin

# A new type of supplement

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- Allicin now available as a stable liquid
- Allicin now formulated into powder capsules (Allimax)
- Allicin now formulated into cream
- No need to wait for conversion as Allimax IS allicin
- Likes the acid environment of your stomach



# Preventing the Common Cold

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A double blind placebo controlled survey with 146 volunteers



Active supplement with the  
optimum dose of allicin is found  
**ONLY** in Allimax

# Results - Number of colds

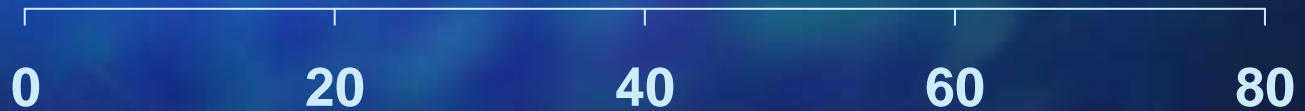
Placebo



Active



$P < 0.001$



# Results - Average symptom duration (days)

Placebo



Active





# Repeat infections

Placebo



Active



# Conclusions

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- Allimax can prevent the Common Cold
- Reduction of severity of symptoms
- Re-infection less likely with Allimax
- Could represent huge savings for the USA economy
- Product is well tolerated and may offer other advantages according to volunteer reports
- Manufacturer's recommended dose was used
- Addition of Vitamin C and bioflavonoids is a logical combination

# Allicin as a modern anti-bacterial

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- Known as “Nature’s antibiotic”
- Broad spectrum of activity
- No resistance has ever been recorded
- Allicin prevents bacterial enzyme production
- Problem infections can be resolved with allicin
- Allicin is natural, safe and effective

# Historical use of allicin (from garlic) for resistant infections

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- Typhoid
- Cholera
- Smallpox
- Dysentery
- Plague
- Anthrax (agricultural)
- Tuberculosis\*\*
- Used EXTENSIVELY until the sulphonamide antibiotics were discovered



# MIC (ppm allicin) for some problem bacteria

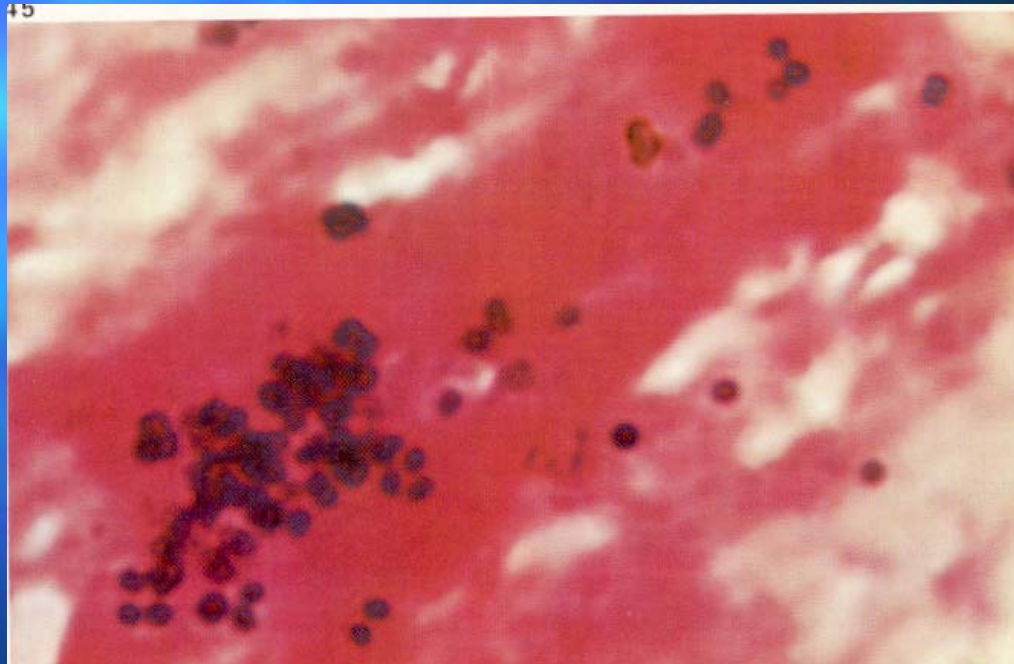
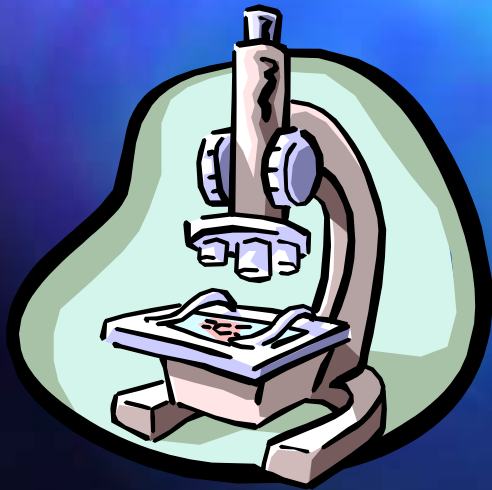
■ Streptococcus pyogenes	16 ppm
■ Staphylococcus aureus	16 ppm
■ Listeria monocytogenes	16 ppm
■ Escherichia coli 0157	32 ppm
■ Salmonella typhimurium	32 ppm
■ Clostridium perfringens	64 ppm
■ Helicobacter pylori	16 ppm

# Staphylococcus aureus

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- Involved in 95% of simple cases of eczema
- Leads to worsening of clinical symptoms
- Causes secondary infection
- Prevents topical steroids from working
- Present in most cases of acne
- Prevalant bacterium in psoriasis

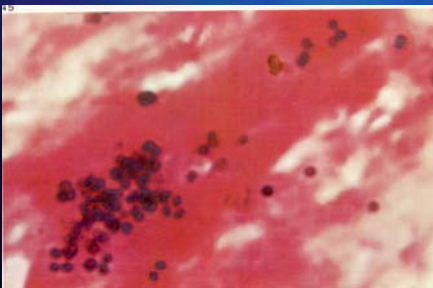
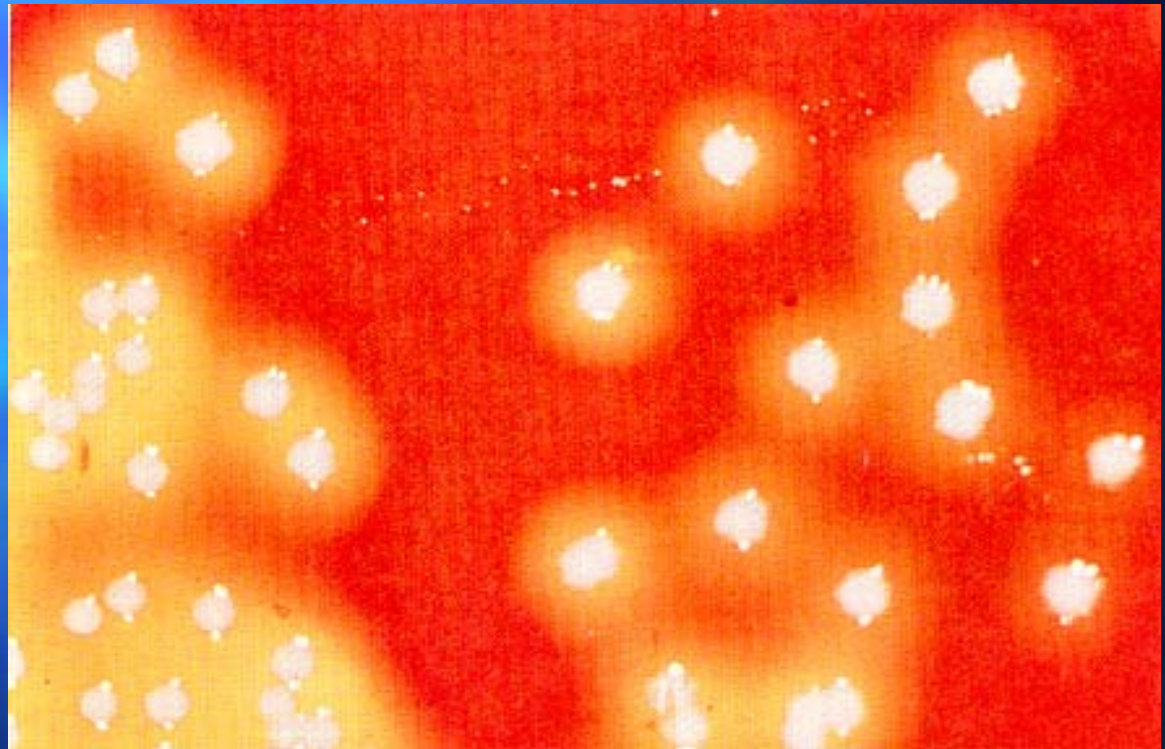
# *Staphylococcus aureus*



Bunches of Grapes



# *Staphylococcus aureus* - The "Golden" Bacterium



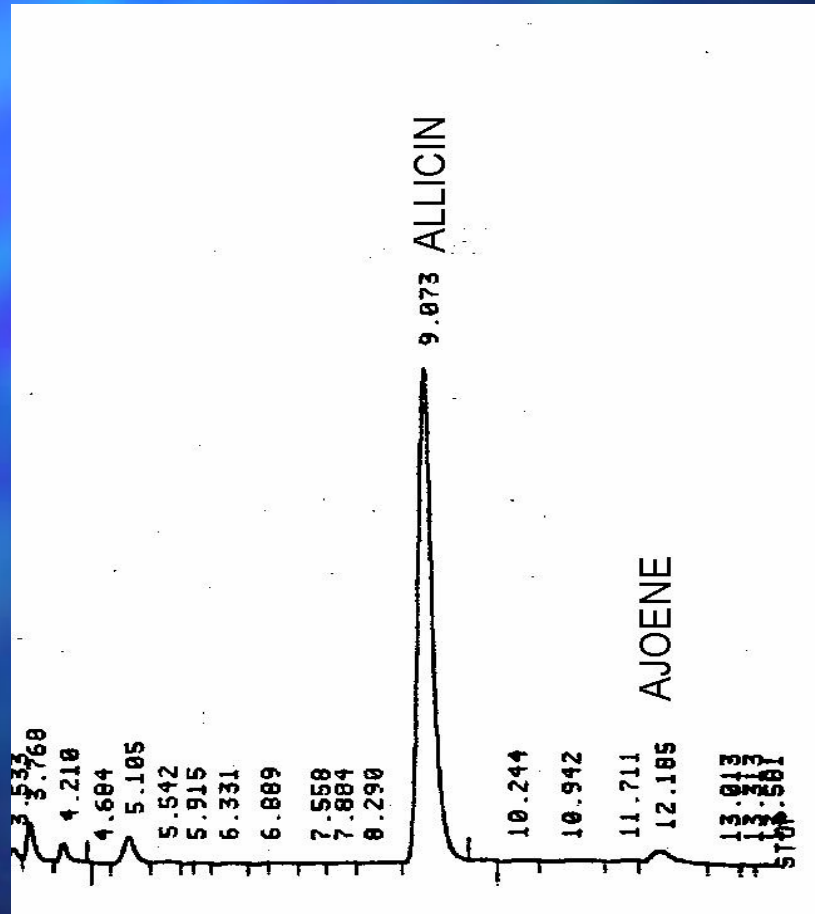
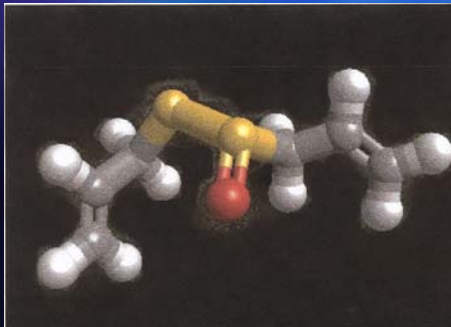


# Effect of skin condition on carriage

PERCENTAGE  
PREVALENCE  
OF S.AUREUS

SITE	Normal	Eczema	Psoriasis
Nose	34	59	37
Cheek	7	63	16
Chest	3	48	21
Forearm	2	63	16
Scapula	2	46	37

# Purity of Allicin using HPLC

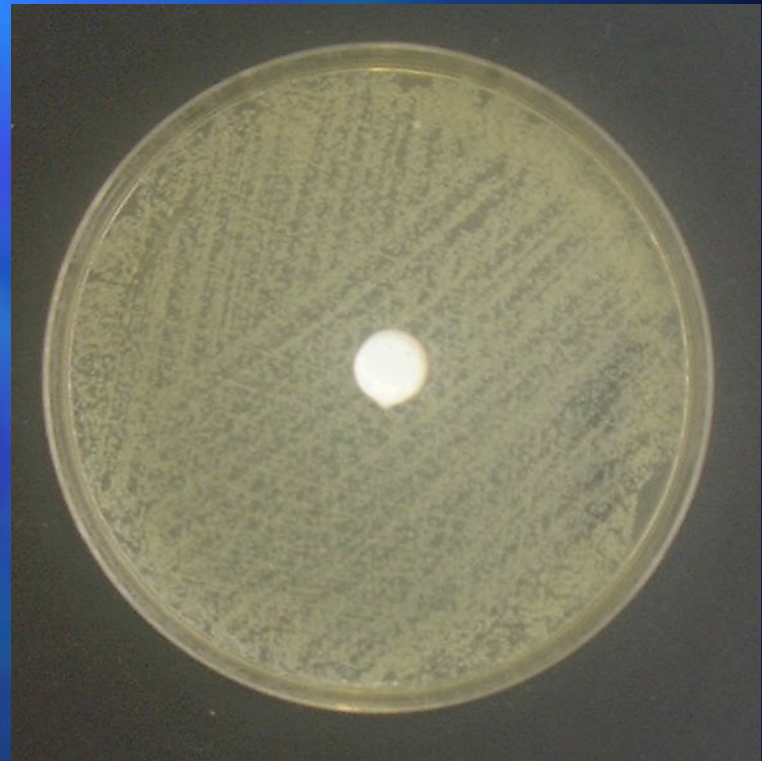
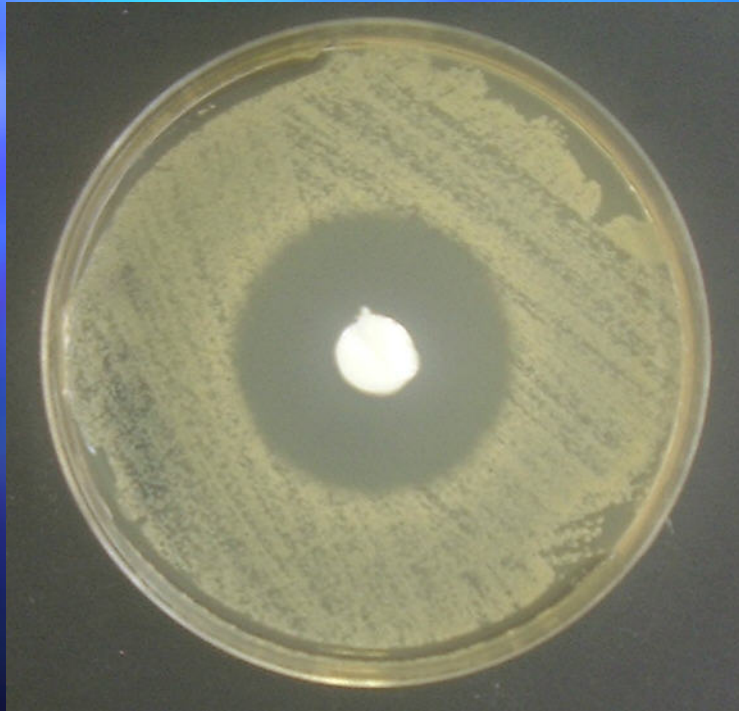


# Allicin kills Staph. aureus

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- Work completed at The University of East London
- 30 bacterial strains were tested 12 were resistant to pharmaceutical antibiotics
- ALL strains were sensitive to Allicin

# ALLIMAX vs MUPIROCIN (a pharmaceutical antibiotic)





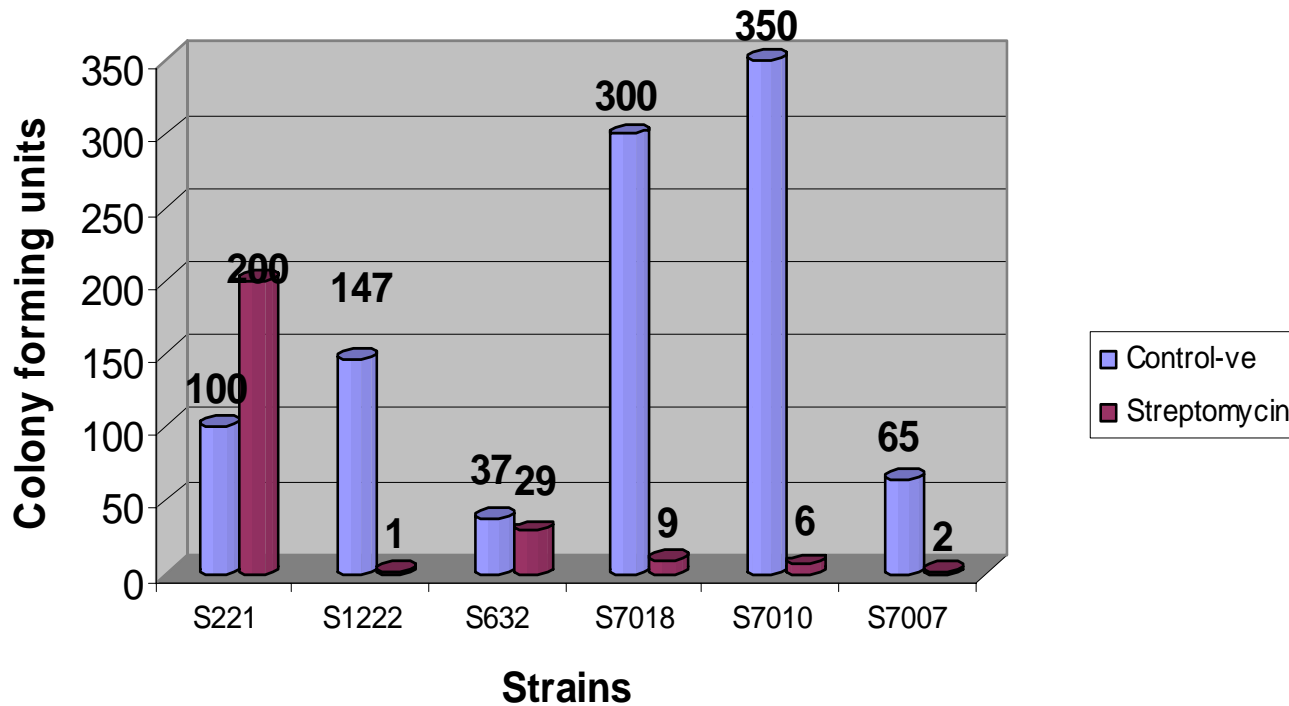
# Multi drug resistant TB

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- Mycobacterium tuberculosis identified in 1882 with nodular lesions in tissue
- Disease can lay dormant for many years
- Chronic infection is spread very easily by coughing or sneezing
- Often treated by combinations of antibiotics including streptomycin and rifampicin

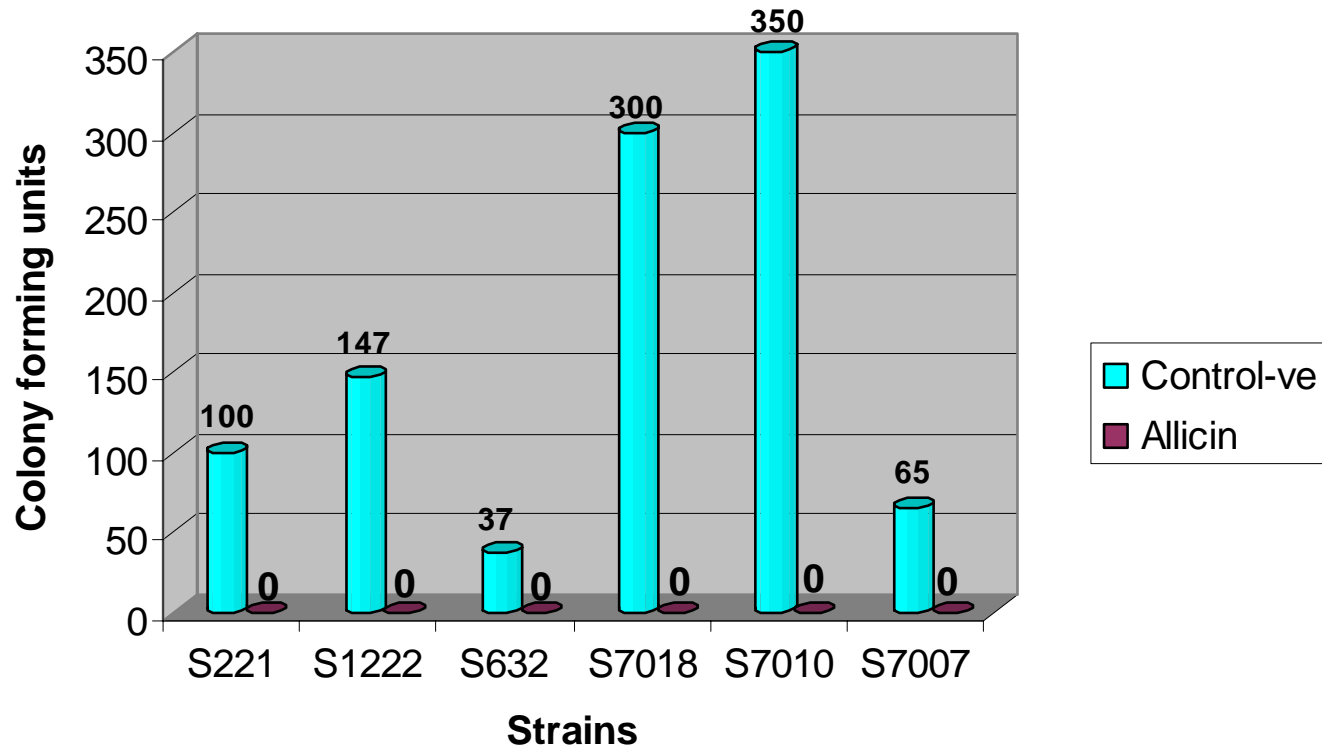
# TB isolates from taken from The Royal London June 2002

Activity of Streptomycin against MDRTB



# MDR-TB exposed to Allicin

Activity of Allicin against MDR-TB



# Conclusions

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- Any growth in the presence of an antimicrobial is significant with MDR *Mycobacterium tuberculosis*
- Growth was noted on all slopes where strains were treated with Streptomycin
- No Growth was found on any of the slopes where strains were treated with Allicin



# Allicin range to be available

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- Allicin cream – for all skin conditions
- Allicin liquid – for nail infections and herpes virus
- Allicin plus Ginger for travellers tummy
- Allicin throat spray for chest infections
- Allicin plus a probiotic for IBS