

## ANTI-BACTERIAL ACTION OF NESCAFÉ COFFEE AGAINST STREPTOCOCCUS SPECIES

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### Background:

Extracts from coffee beans have been shown to exhibit antibacterial action and it is widely believed that the caffeine content is responsible for this property.

### Material & Methods:

This study investigated the antibacterial activity of decaffeinated and non-decaffeinated NESCAFÉ 'classic' coffee preparations at varying concentrations against some pharyngitis-causing streptococcus species: group A streptococcus, group B streptococcus, group D streptococcus and *Streptococcus pneumoniae*. The bacterial sensitivity to the coffee preparations was carried out using disc diffusion, well diffusion and coffee agar plate sensitivity testing. Zones of inhibition and growth on the plates were observed at 24 hours and 48 hours.

### Results:

There is no agreement between the disc and well diffusion methods; both show inconsistent zones of inhibition on repeat experiments. However, growth inhibition of streptococcus species relative to coffee concentrations was consistently observed on coffee agar plate. At a coffee concentration of 8g/100ml the highest used in this study, the growths of all the four streptococcus species were inhibited, with the non-decaffeinated coffee acting much more strongly than the decaffeinated. Both coffee preparation types show antibacterial activity.

### Conclusion:

Antibacterial activity in the coffee used for this study may not be due to caffeine alone as decaffeinated coffee also shows comparable antibacterial activity with the non-decaffeinated coffee; it may also be that the decaffeinated coffee still has enough caffeine to exert its antibacterial effect. The caffeine content at the concentration of coffee which showed complete inhibition of the streptococcus species is rather high and may be detrimental to human health. However, it is possible that at much lower concentrations it may work synergistically with as yet to be identified substances to protect against pharyngitis causing streptococcus. Thus further research is needed to determine the possible use of coffee as an antibacterial agent in the treatment and/or prevention against pharyngitis in humans.

### Keywords:

Streptococcus species, coffee, decaffeinated, non-decaffeinated, antibacterial activity

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