

# Antimicrobial effect of pomegranate extract in *Staphylococcus*, *Pseudomonas*, *Escherichia* and *Malassezia* cultures.

L Ramió-Lluch<sup>1</sup>, S Cerrato<sup>1</sup>, N García<sup>1</sup>, P Brazís<sup>1</sup>, A Puigdemont<sup>2</sup>.

<sup>1</sup>UNIVET, I+D Department, Barcelona, Spain.

<sup>2</sup>Department of Pharmacology, Therapeutics and Toxicology, Veterinary Faculty, Autonomous University of Barcelona, Barcelona, Spain.

## Introduction

Active bioflavonoids of pomegranate (*Punica granatum*) have demonstrated antioxidant, anti-inflammatory and analgesic effects<sup>1,2</sup>. Moreover, wound healing activity<sup>3</sup> and hair care properties<sup>4</sup> make pomegranate extracts useful for the treatment of sensitive and allergic skin.

Other polyphenols have shown antimicrobial activity against skin pathogens<sup>5</sup>. Due to relevance of primary and secondary infections in dog skin, a microbiological study with the most common pathogens has been suggested.

## Objective

To assess the antimicrobial activity of pomegranate extract against the most common canine dermatopathogens such as *Staphylococcus pseudintermedius*, *Pseudomonas aeruginosa*, *Escherichia coli* and *Malassezia pachydermatis*.

## Materials and methods

*Staphylococcus pseudintermedius*, *Pseudomonas aeruginosa*, *Escherichia coli* and *Malassezia pachydermatis* were obtained from skin dogs isolates, diagnosed at UNIVET.

Pomegranate extract were diluted (10, 5, 1, 0.5 and 0.1%, w/v) and pH were adjusted at 5.5. Sterile 6 mm discs were submerged in each solution during 5 minutes. Marbofloxacin discs for bacteria cultures or ketoconazol discs for fungal cultures were used as a positive control. Cultures were incubated at 37°C for 16-18h and inhibitory growth halos were measured with a calliper. Results were expressed as the mean of four replicates for each microorganism.

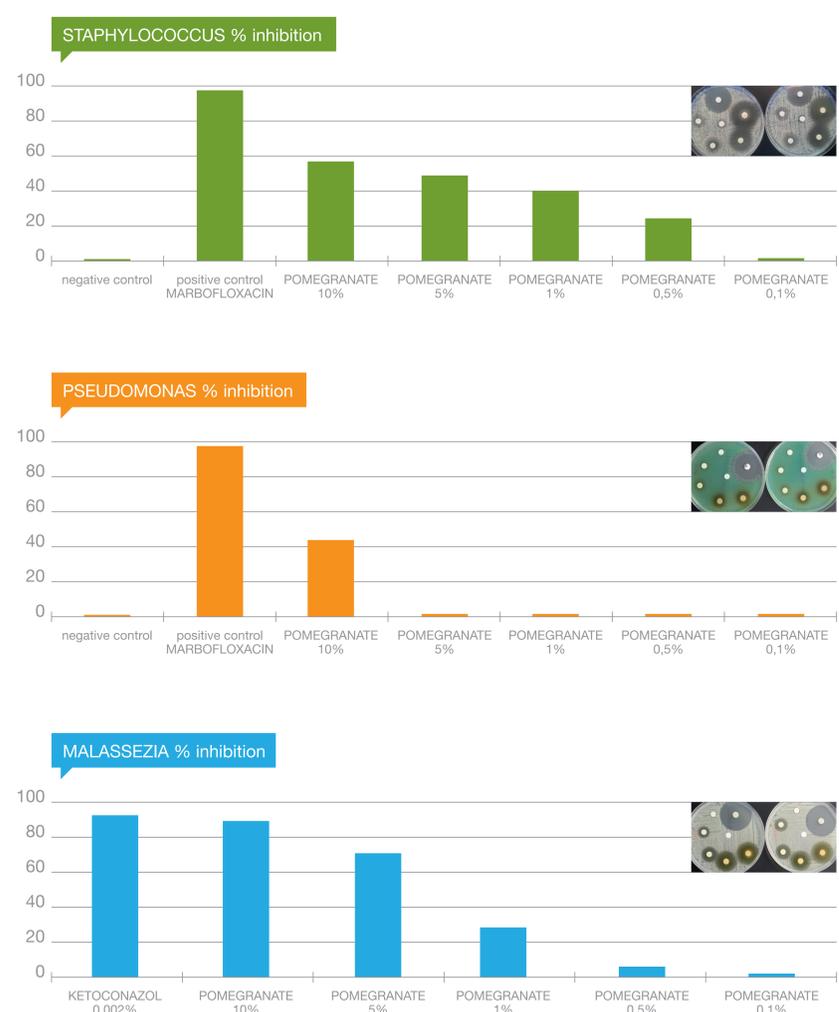


*Staphylococcus pseudintermedius* skin infection in dogs. Images by courtesy of CV Balmes (Palma)



Overgrowth of *Malassezia pachydermatis* in a dog. Images by courtesy of CV UETUS (Girona).

## Results



## Conclusion

- Pomegranate extract showed a high dose-response antimicrobial activity against *Staphylococcus*, *Pseudomonas* and *Malassezia*, the most typical microorganisms isolated from the skin of dogs.
- No inhibitory effects were observed against *E.coli*.
- The antimicrobial effects observed in this study reinforces pomegranate usefulness as a topical treatment in both primary and secondary skin infections induced by these microorganisms.
- Pomegranate is a natural alternative to antibiotic treatments.

## References

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