

A Brief Note on Molecular Docking

Stan Peters*

Department of Veterinary Science, Addis Ababa University, Bishoftu, Ethiopia

Description

Molecular docking became an important method in drug discovery after the first algorithms were developed in the 1980s. Investigations involving critical molecular processes, such as ligand binding modalities and the related intermolecular interactions that stabilise the ligand-receptor complex, can, for example, be carried out quickly. Furthermore, molecular docking algorithms make quantitative estimates of binding energetics, ranking docked molecules based on ligand-receptor complex binding affinity. Because of its capacity to anticipate the conformation of small-molecule ligands within the appropriate target binding site with a high degree of accuracy, molecular docking is one of the most commonly utilised methods in SBDD.

The technique of docking involves removing sections of an animal's tail. While the terms docking and bobbing are more typically used to describe the removal of the tail, cropping refers to the ears. There are two procedures for docking a dog's tail. The first approach includes using a rubber band to cut off the blood supply to the tail for a few days until it falls off. The second approach requires using medical scissors or a knife to cut the tail off. The length of the tail docking varies by breed and is typically specified in the breed standard. Bobtail lines can be found in a variety of dog breeds. These dogs have a similar appearance to docked dogs, however they are a different naturally occurring phenotypic.

In current times, tails docking is done for preventive, therapeutic, aesthetic, and/or harm prevention objectives. Field dogs' tails, such as those of some hunting dogs, herding dogs, and terrier dogs, can collect burrs and foxtails, causing pain and infection, as well as being prone to abrasion or other injuries while travelling through deep brush or thickets due to the tail's wagging. In the field, tail bones can break, leading in spinal injury, or terriers can become caught underground and need to be hauled out by the tail, in which

case the docked tail protects the dog from spinal injury or stress. "These explanations for docking working dogs' tails lack strong scientific basis," according to the American Veterinary Medical Association (the largest veterinary professional organisation in the United States). The rate of tail injuries in dogs was 0.23 percent in the greatest study to date, and it was calculated that 500 dogs would need to be docked to avoid one tail injury.

Both breeders and physicians commonly perform docking on puppies younger than 10 to 14 days old without anaesthetic. While the tails of some working dogs are docked to prevent illness or damage, the tails of larger dogs used for guard or protection work (as opposed to patrol work, where a handler can give supplemental treatment) may be clipped to prevent their tails from being gripped in a fight. This is particularly common in Rottweilers, Doberman Pinschers, Bandogs, Cane Corsos, and Boerboels, among other breeds.

Certain breeds may also use their tails as rudders when swimming and possibly for balance when running, putting energetic dogs with docked tails at a disadvantage to their tailed counterparts. Docked dogs have to work more to compensate for the loss of their tail, according to videos comparing docked and undocked canines running and jumping. Prof. Chris Zink, a canine pathologist and sports medicine expert, believes that the additional stress placed on the joints can have long-term health effects. The American Veterinary Medical Association, the American Animal Hospital Association, and the Canadian Veterinary Medical Association have all denounced docking. These organisations have also requested that docking be removed from all breed standards.

How to cite this article: Peters, Stan. "A Brief Note on Molecular Docking." *J Vet Sci Technol* S9 (2021) : e009.

*Address for Correspondence: Dr. Stan Peters, Department of Veterinary Science, Addis Ababa University, E-mail: stanpeters@gmail.com

Copyright: © 2021 Peters S. This is an open-access article distributed under the terms of the creative commons attribution license which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Received: November 04, 2021; Accepted: November 18, 2021; Published: November 25, 2021