

THE MORPHOLOGICAL PROFILES OF BASOPHILS AND EOSINOPHILS AND THEIR RESPONSES TOWARDS COMMON GASTROINTESTINAL PARASITES BETWEEN CATS AND DOGS

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**FACULTY OF VETERINARY MEDICINE
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ABSTRAK

MOHD ALIF BIN AZMI. Profil Morfologi Basophils Dan Eosinophils Dan Respon Mereka Terhadap Parasit Gastrointestinal Umum Antara Kucing Dan Anjing. Dibimbing oleh RISA TIURIA dan AGUS SETIYONO.

Parasit gastrointestinal biasanya umum pada manusia dan hewan di seluruh dunia. Parasit ini menyebabkan infeksi parasit yang terbukti berakibat fatal tanpa perawatan atau pengobatan apa pun. Parasit telah tersebar di seluruh dunia sejak dahulu kala karena masing-masing parasit ini memiliki kemampuan beradaptasi yang mendalam baik itu ada di lingkungan atau di dalam tubuh inang. Untungnya, manusia dan hewan memiliki beberapa cara untuk mempertahankan diri dari serangan parasit dengan bantuan sel darah putih, khususnya eosinofil dan basofil. Menariknya, eosinofil dan basofil untuk kucing dan anjing memiliki perbedaan kecil dalam strukturnya yang memungkinkan kita untuk membedakannya dalam diagnosis laboratorium. Respon dari sel darah putih yang bertahan ini menghasilkan serangkaian respon yang memiliki arti penting dalam memerangi parasit saluran pencernaan. Tinjauan literatur memungkinkan pemahaman yang lebih baik tentang alasan perbedaan morfologis, fungsi dan respons eosinofil dan basofil antara kucing dan anjing. Meskipun eosinofil dan basofil umumnya diketahui oleh masyarakat berpendidikan, pengetahuan yang lebih mendalam diperlukan bagi mereka yang berfokus pada perawatan kesehatan hewan, peternakan, dokter hewan, pekerja laboratorium, dan lain-lain. Ulasan ini terutama akan mencakup beberapa topik yang jelas seperti parasit gastrointestinal yang umum terutama di Malaysia, struktur morfologi basofil dan eosinofil, mobilisasi basofil dan eosinofil, basofilia dan eosinofilia, serta aktivasi basofil dan eosinofil.

Kata kunci: parasit gastrointestinal, basofil, eosinofil, kucing, anjing



ABSTRACT

MOHD ALIF BIN AZMI. The Morphological Profiles of Basophils and Eosinophils and Their Responses Towards Common Gastrointestinal Parasites Between Cats and Dogs. Supervised by RISA TIURIA and AGUS SETIYONO.

Gastrointestinal parasites are usually common in both humans and animals worldwide. These parasites cause parasitic infections that are proven to be fatal without any care or treatment. These creatures have plagued worldwide since the old days as each of these parasites has profound adaptability whether it exists in the environment or inside hosts' body. Fortunately, humans and animals have some way to defend themselves against the onslaught of the parasites with the help of white blood cells, specifically, eosinophils and basophils. Interestingly, the eosinophils and basophils for both cats and dogs have minor differences in their structures allowing us to differentiate them in lab diagnostics. The responses of these defending white blood cells bring about a cascade of reactions that has significance in combatting these intestinal parasites. A review of the literature allows a better understanding of the reason for the morphological differences, functions and responses of the eosinophils and basophils between two common pet animals of a different species, cats and dogs. Although eosinophils and basophils are generally known to the educated public, more in-depth knowledge is required for those who focus on animal healthcare, husbandry, veterinarians, lab workers, etc. This review will mainly cover few apparent topics such as the common gastrointestinal parasites mainly in Malaysia, the morphological structure of the basophils and eosinophils, the mobilization of basophils and eosinophils, basophilia and eosinophilia, and activation of basophils and eosinophils.

Keywords: gastrointestinal parasites, basophils, eosinophils, cats, dogs

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MOHD ALIF BIN AZMI

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As one of the requirements to obtain a Bachelor's degree
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May this scientific paper give benefit for both humans and animals.

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