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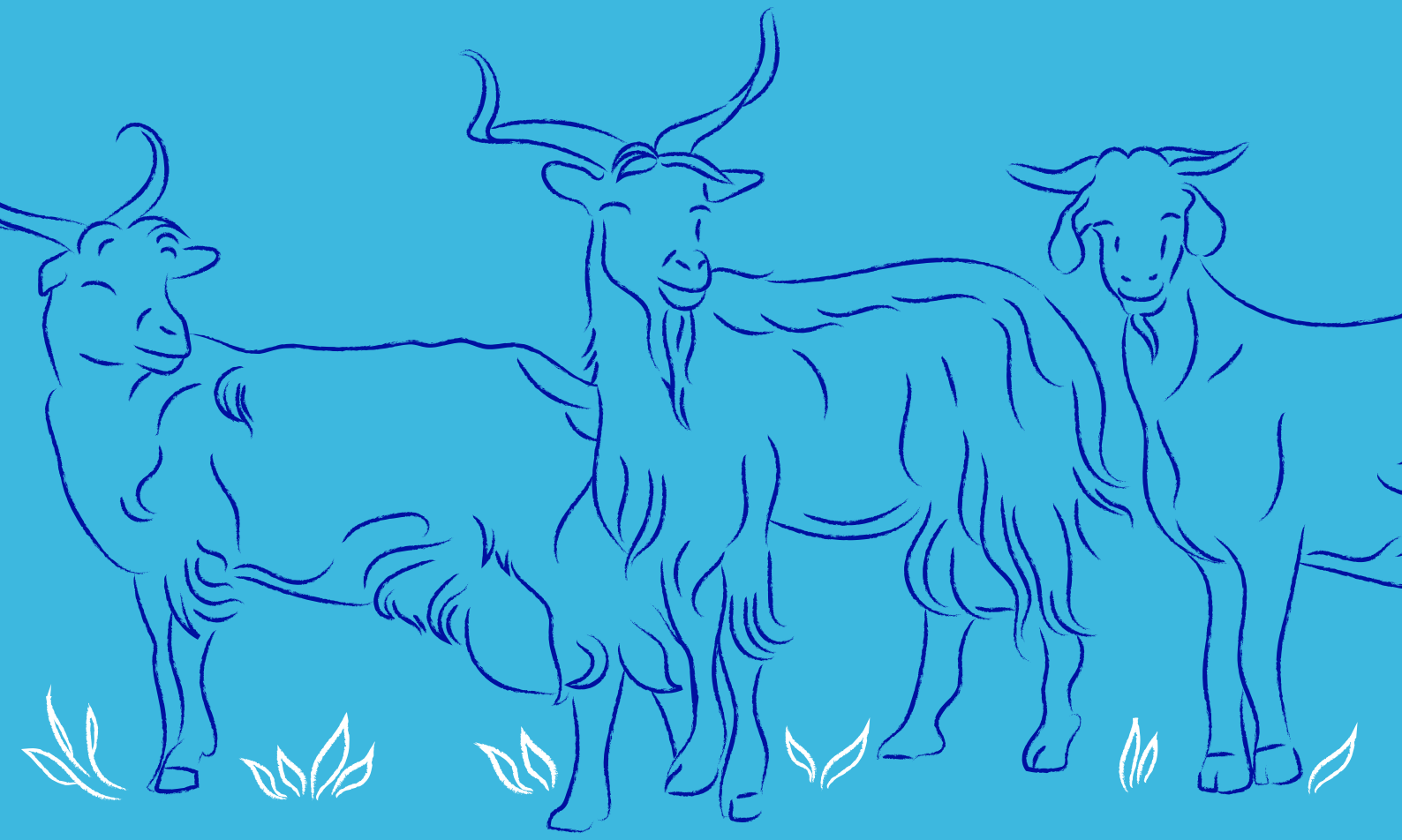

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Comparative antimicrobial activity of goat cathelicidins SC5 and Bactenecin 3.4 against *E. coli*

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The innate immune system is the first line of defence against pathogens. Among these, host defence peptides (HDP) play a crucial role as they have direct antimicrobial activity and modulate the immune response. Cathelicidins are a well-known HDP found in most vertebrates, including goats. These peptides contribute to the immune system by targeting a broad spectrum of microorganisms and are involved in immune regulation. Cathelicidins are structurally diverse and are classified according to the secondary structure of their mature peptides, including -helices, -hairpin structures, and elongated forms rich in proline-arginine or tryptophan. Their genes are typically organised in genomic clusters. The goat has seven cathelicidins, several of them have been tested as antimicrobial agent. For example, the bactenecin 3.4 showed an activity against several microorganisms. However, no information is available about the antimicrobial activity of SC5 goat cathelicidin. The aim of this study was to test the cathelicidin SC5 and compare it with the Bactenecin 3.4. These two peptides have been tested against a panel of forty-eight E. coli isolated from human urine system. The SC5 showed a MIC50 of 3.125 µM and a MIC90 of 50 µM, while Bactenecin 3.4 have 25 and 50 µM, respectively. The SC5 presented a MBC50 of 3.125 µM and a MBC90 of >50 µM, while Bactenecin 3.4 have 25 and >50 µM, respectively.