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原著

手指付着coagulase negative staphylococciの菌種と宿主ABO式血液型の関係

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Relationship between the Species of Isolated Coagulase Negative Staphylococci and The ABO-Blood Type of The Host

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Abstract

Coagulase negative staphylococci (CNS) are a kind of bacteria normally found on human skin (resident bacteria) and include Staphylococcus epidermidis, S.capitis and 16 other species. In this study, the relationship between isolated species of CNS and the ABO blood type of the host on which they were found was investigated. For this purpose, 200 CNS colonies were isolated from hosts of each blood type and identified by the method of API-STAPH system. One hundred and eighteen strains (59%) of Staphylococcus epidermidis ,28 strains (16%) of S.capitis and 54 strains (25%) of other CNS species were isolated from hosts with blood type A. One

hundred and fortysix strains (73%) of S.epidermidis, 8 strains (4%) of S.capitis and 46 strains(23%) of other CNS species were isolated from hosts with blood type B. One hundred and twentythree strains (62%) of S.epidermidis, 17 strains (9%) of S.capitis and 57 strains (29%) of other CNS species were isolated from hosts with blood type AB. Thus, S.epidermidis was isolated at high frequency (over 50 %) and S.capitis was isolated at low frequency (under 16%) in hosts with those three blood types. On the other hand, 50 strains (25%) of S.epidermidis, 49 strains (25%) of S.capitis and 101 strains (50%) of other CNS species were isolated from hosts with blood type O. Three hypotheses were proposed and experiments were carried out to explain the data showing a lower isolation rate of S.epidermidis and a higher rate of S.capitis in hosts with blood type O. It was found that S. capitis combined more easily with O type chicken red blood cells and also easily utilizes the O type specific sugar, fucose, better than S.epidermidis These data indicate that S.capitis has greater tendency to reside on hosts with O type blood.

要 約

ヒトの皮膚常在菌の一種であるcoagulase negative staphylococci（CNS）にはS.epidermidisやS.capitisほか16種が含まれている．宿主のABO式血液型と分離されるCNSの菌種の関係を各血液型宿主より200個ずつのCNSを分離し，API-STAPH法によりそれらの菌種を同定して比較した．A型宿主からはStaphylococcus epidermidisが118株（59%），S.capitisが28株（16%），その他CNSが54株（25%）分離された．B型宿主からはS.epidermidisが146株（73%），S.capitisが8株（4%），その他CNSが46株（23%）分離された．AB型宿主からはS.epidermidisが123株（62%），S.capitisが17株（9%），その他CNSが57株（29%）分離された．すなわち，これら3種類の宿主からはS.epidermidisが50%以上の高率で分離され，S.capitisは16%以下の低率でしか分離されなかった．これに対しO型宿主からはS.epidermidisが50株（25%），S.capitisが49株（25%）とほぼ同率分離され，その他のCNSは101株（50%）分離された．今回はS.capitisがS.epidermidisよりも高率にO型宿主より分離される点に注目し，原因を解明するために三つの仮説を立てて各種の実験を行った．この結果，S.capitisはS.epidermidisに比較するとO型的性状を示すニワトリ赤血球に結合しやすいことや，O型特異糖であるfucoseを利用しやすいことなどが明らかとなった．これらの結果はS.capitisがS.epidermidisに比較するとO型宿主に定着しやすいことを示唆すると考えられた．