Polymorphisms in Melanocortin 1 Receptor Gene (*MC1R*) and their Effects on Plumage Coloration in Native Japanese Chicken Breeds

1 (*MC1R*)

KABIR MD HUMAYUN

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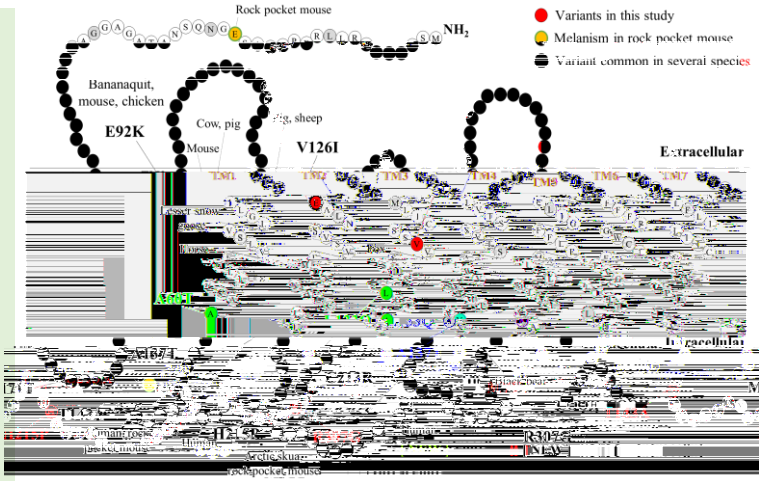
Plumage or coat color has become a valuable marker for selection in domesticated animals. Over 60 loci are involved for plumage coloration in chickens. The *MC1R* is the key gene for melanogenesis in avian plumage, which is mostly controlled by two melanin distribution, namely eumelanin (black to brown) and phaeomelanin (red to yellow). In Japan, there are approximately 50 chicken breeds, many of which are ornamental birds and used as hobby purposes, because of their large varieties in plumage coloration. Still now, the molecular basis for this large plumage color variation is still unclear along with their mechanisms of control. This study aimed to investigate polymorphisms in *MC1R* and their association with plumage pigmentation. Hope that, this information will contribute to the development of chicken genetics to produce new brand chickens and be important for fancy fowl keepers for their future breeding plans to avoid unexpected plumage colors from their stocks.



: (: 7950) tsudzuki@hiroshima-u.ac.jp