計画10-3

マイクロサテライトＤＮＡを使った種内、種間の遺伝的距離の解析

菱田　靖（京都大、霊長研）

マイクロサテライトＤＮＡはサイズ多型が著しく、短時間に多量のサンプルの試験が可能であるため遺伝子マーカーとして利用は広まっており、既にヒトや家畜のゲノムからのマイクロサテライトは数多く報告されている。一方で、このマーカーは開発までには手間がかかり、ヒト以外の霊長類からの報告例は少ない。

近縁な動物からの応用が可能であることから、ヒトのマーカーをヒヒとマカクで試みた。文献や私信から合計２６のマイクロサテライトを候補に、ニホンザル、アカゲザル、アヌビスヒヒ、マントヒヒ、ゲラダヒヒのＤＮＡをテンプレートにＰＣＲを試みた結果、１８のマイクロサテライトでヒヒ、マカクのいずれにもシグナルを示し、多型であった。以下の１８の遺伝子マーカーは、ヒヒとマカクの集団遺伝学的研究に有用と考えられる；D1S102、D1S104、D1S158、D1S180、D1S194、D1S215、D1S223、D1S304、D1S306、D2S144、D6S311、D11S925、D13S159、D16S402、D17S791、D17S804、D18S537、D22S280。

紅海を挟んで分布するマントヒヒの遺伝的関係をみるため、上記のマーカーを使ったサウジアラビアとエチオピアのマントヒヒを比較したプレリミナリーな試験からは、２つの集団の遺伝的変異に大きな偏りはみられなかった。

今後、マイクロサテライトのデータを集め、ヒヒ、マカクでの種内、種間の遺伝的距離の解析を試みたい。

（2）自由研究

自由１

Functional Morphology of the Paranasal Sinuses in New World monkeys

Thomas Koppe (Okayama Univ. Dental School, Dept. Anatomy)

Knowledge about the variation in sinus morphology and its relation to skull architecture is crucial to interpret sinus functions, which have remained obscure. Earlier studies on catarrhine primates have provided some evidence that simple allometry does not account for the differences in maxillary sinus size between cercopithecoids and hominoids. In order to clarify these findings we have studied the skull pneumatization in New World monkeys (NWM) as an outgroup. Dry crania of 63 adult NWM covering Atelinae, Pithecinae and Cebidae were CT scanned and the volume of the maxillary sinus (MSV) was calculated. Due to the limited resolution of the CT scans, it was not possible to obtain reliable data for the maxillary sinus size of certain smaller species such as *Saimiri*, *Saguinus*, and *Callithrix*. Nevertheless, the presence of a maxillary sinus seems to be a constant feature of NWM, though the maxillary sinus of some NWM such as *Chiropotes* and *Cacajao* is clearly reduced in size. Although MSV enlarges across anthropoid primates with increasing skull size, this relationship is quit complex. In fact a different regression equation (reduced major axis) obtains for hominoids, macaques and NWM. Merging the data of both groups the hominoids and NWM results in a still stronger relationship. In contrast, the distinct scaling pattern of MSV in macaques strengthen our earlier observation of reduced maxillary sinus size in cercopithecoids, and suggests that a moderate-large MSV is the primitive condition for anthropoids. The existence of at least two distinct scaling pattern of MSV to skull size indicates, however, that variation in MSV in anthropoids is not related to a single factor. Currently we are studying the influence of epigenetic factors such as diet on the variation in MSV among NWM.