Conversely, embryos of living birds suggest that birds have lost one finger from the outside and one from the inside of the hand. Unlike all other theropods, the hand of Limusaurus strongly reduced the first finger and increased the size of the second. Clark and Xu argue that Limusaurus' hand represents a transitional condition in which the inner finger was lost and the other fingers took on the shape of the fingers next to them.

The three fingers of most advanced theropods are the second, third and fourth fingers-the same ones indicated by bird embryos-contrary to the traditional interpretation that they were the first, second and third.

Limusaurus is the first ceratosaur known from East Asia and one of the most primitive members of the group. Ceratosaurs are a diverse group of theropods that often bear crests or horns on their heads, and many have unusual, knobby fingers lacking sharp claws.

The fossil beds in China that produced *Limusaurus* have previously yielded skeletons of a variety of dinosaurs and contemporary animals described by Clark and Xu.

These include the oldest tyrannosaur, *Guanlong wucaii*; the oldest horned dinosaur, *Yinlong downsi*; a new stegosaur, *Jiangjunosaurus junggarensis*; and the running crocodile relative, *Junggarsuchus sloani*.

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New Progress in Gold-Nanoparticle-Based Biochips

A significant progress in the research on the application of gold nanoparticles in biochips has recently been obtained by the research team led by Prof. Wang Zhenxin at Changchun Institute of Applied Chemistry, Chinese Academy of Sciences. The research findings have been published in such top academic journals as *Analytical Chemistry* and *Biosensors and Bioelectronics*.

As a high-flux analytical technique coming into being in the 1990s, biochip technology has been widely applied to genomics research as DNA biochips gained unprecedented development, and, as a result, enormous success has been achieved in genetic sequencing research. Compared with the human genome project, research on proteomics and glycomics are facing much severer challenges, therefore, it has become one of the urgent tasks for analytical chemistry in life sciences to develop high-speed, low-cost and high-flux biochip-based proteomic analytical techniques.

By labeling biochips with biomolecule-modified gold nanoparticles, Prof. Wang and his research team succeeded in obtaining the expected new-type biochips via the application of surface enhanced Raman spectrum and resonant light scattering detection methods, realizing the precise detection of polypeptide, protein and carbohydrate on the one hand and making it possible to investigate into the interaction between zymolyte, enzyme, protein and antibodies on the other.

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