Regeneration of biological functions and tissues based on materials chemistry and basic medicine

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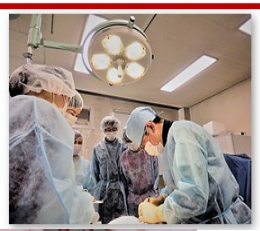
Utilizing knowledge of materials chemistry, the therapeutic and transplant materials used in clinical medicine, cell evaluation, and biological evaluation will be performed on the newly created materials.

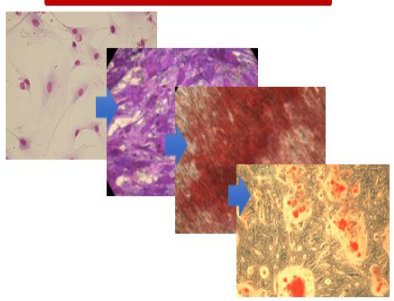
Selection and development of materials for the regeneration and treatment of skin, bones, blood vessels, biological membranes, etc. (Material used: metal, ceramics, carbon, gel)

Evaluation of materials using chemical measuring instruments

Biological and biocompatibility experiments using animals (mice, rat, rabbit, pig), including surgery

Cell test using various cells





Content: Many people have some diseases due to metabolic dysfunction, bacterial infections, or cancer. If you are unfortunate enough to develop oral diseases, bone diseases such as arthritis and osteoporosis, or solid or metastatic cancer, surgical This can result in multiple organ failure due to infection and damage to the organs such as teeth, skin, and bones. It can be accompanied by tissue loss. Research in the field of engineering is becoming more and more important every year for such diseases. Recently, various artificial materials (antimicrobial materials, medical materials, implant materials), teeth, and bones using mesenchymal cells have been developed. The goals of our laboratory are to research the most suitable and novel artificial materials that can be applied to patients and to develop new dental and dental prostheses using mesenchymal cells. Research on bone and skin reconstruction and regeneration, reduction of bacterial infections, and development of minimally invasive anti-cancer drugs will help to prevent early development of healthy and disease-causing diseases.

Appealing point: Our mission is to contribute to clinical medicine to restore life. Specifically, we are developing bio-medical materials (ceramics, metal, carbon, and gel, etc.).

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