

# Specialized Research Consortium of Overcoming multiorgan failure by sepsis

Director  
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## Major research goals

Sepsis is one of the most common cause of death during hospital stay. Our group, consisting of 15 researchers with variable specialities including critical care medicine, nephrology, radiology, pulmonology, cardiology, bioimaging is gathered to make development and clinical application of MR and optic bioimaging technology for early diagnosis of sepsis. Also we aim to develop diagnostic kit of sepsis for clinical use.

## Major research topics

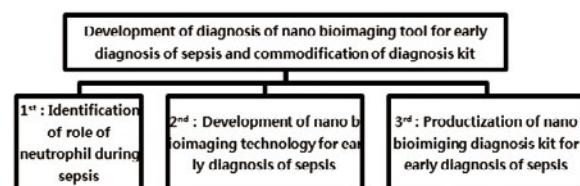
1. Identification of role of neutrophil during sepsis with bone marrow of mouse and human plasma.
2. Development of MR molecular imaging to diagnosis neutrophil reaction during early sepsis.
3. Development of diagnosis kit and clinical application of MR molecular bioimaging diagnosis during sepsis.

## Major achievements

We are working on the phagocytosis and apoptosis

of neutrophil during sepsis in vitro. Also we are measuring phagocytosis and apoptosis of neutrophils by using MR nanobioimaging technology and optical imaging based nano-bioimaging technology in endotoxin-induced sepsis model. After this we are planning to get the MR and optical nano bioimaging in patients with sepsis and septic shock.

## Representative figures of major achievements



## Major relevant publications

1. Kim J, Jeong SW, Quan H, Jeong CW, Choi JI, Bae HB: Effect of curcumin(Curcuma Longa extract) on LPS-induced acute lung injury is mediated by the activation of AMPK. *Journal of anesthesia* 2016, 30(1):100-108.
2. Kim JM, Han HJ, Hur YH, Quan H, Kwak SH, Choi JI, Bae HB: Stearoyl Lysophosphatidylcholine

Prevents lipopolysaccharide-induced extracellular release of high mobility group box-1 through AMP-activated protein kinase activation. *International immunopharmacology* 2015, 28(1):540-545.

3. Won EJ, Choi JH, Cho YN, Jin HM, Kee HJ, Park YW, Kwon YS, Kee SJ: Biomarkers for discrimination between latent tuberculosis infection and active tuberculosis disease. *The Journal of infection* 2016.

### Research networks

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