Prof. Yoshio Goshima and his colleagues (Molecular Pharmacology and Neurobiology) discover a new therapeutic strategy for sepsis!

Prof. Yoshio Goshima (Department of Pharmacology and Neurobiology Yokohama City University Graduate School of Medicine) and his colleagues in collaboration with chiome bioscience have established an anti-Sama3A monoclonal antibody derived by screening a library of chicken B cell clones. This antibody, or chimeric chicken–mouse (4-2 CMch) or humanized (4-2 hIgG) versions of it, neutralizes mouse or human Sema3A-induced axonal collapse *in vitro*; and the chimeric or humanized versions reduce plasminogen activator inhibitor 1 production and improve survival of mice after LPS-induced sepsis *in vivo* (Fig 1). This, the first antibody to recognize a specific type 3 semaphorin, might be used therapeutically in humans.

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Points of Research Results

・Semaphorins play pivotal roles in neuronal, cardiovascular and immune system.
・Specific antibodies against semaphorin3A (Sema3A), a type3 semaphorin, have been established by screening a library of chick B cells clones.
・This antibody neutralizes Sema3A-induced growth cone collapse in vitro. This antibody improves survival of mice after lipopolysaccharide (LPS)-induced sepsis in vivo even when administered after LPS challenge.
・This antibody may be useful for the treatment of human sepsis and other disorders associated with Sema3A.

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