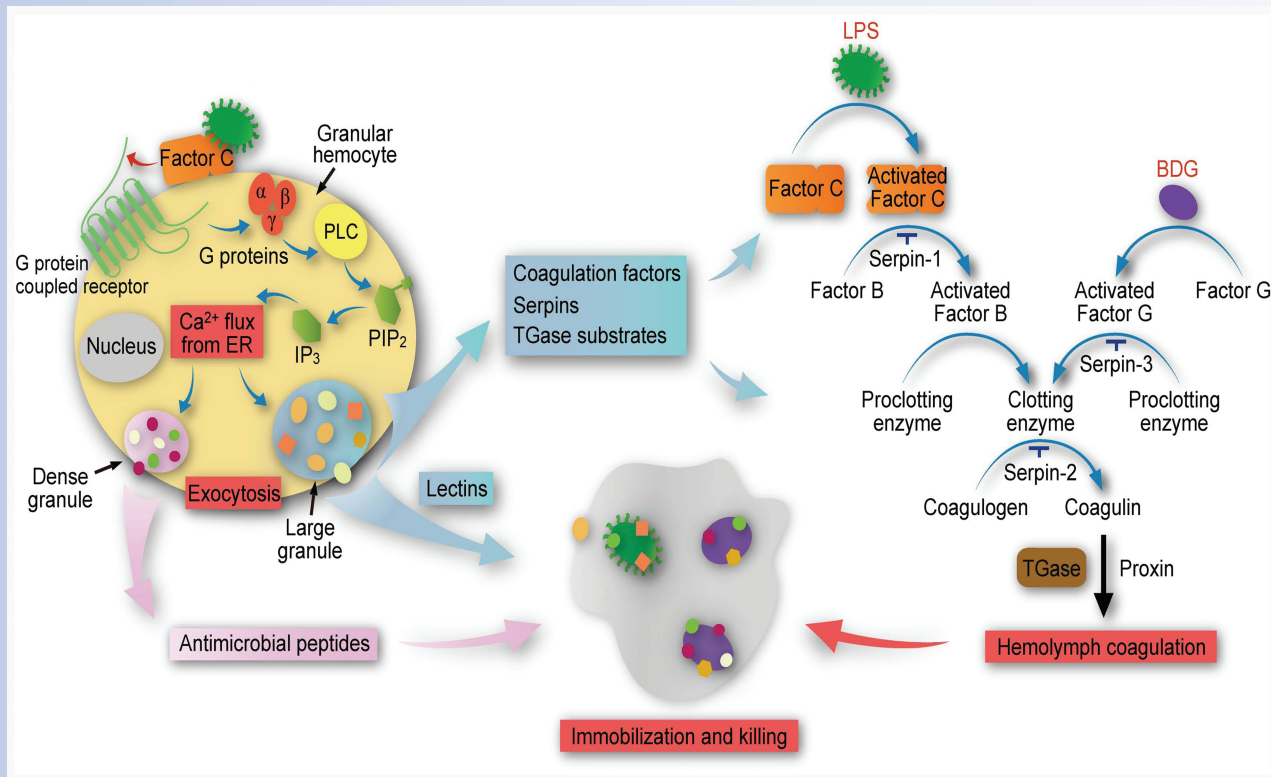


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- Protein Synthesis
- DNA-Protein Interaction
- RNA Processing
- Genetic Engineering
- Genetic Diseases
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Author Index

- Bansal S., 625
Chakraborti S., 765
Chakraborti T., 765
Chen S., 751
Cheng J., 679
Chiou S.-H., 661
Chu X., 751
Chuang M.-H., 661
Chuang W.-C., 661
Cuda G., 625
Deng J., 679
Doi A., 697
Fujii Y., 705
Furuichi N., 689
Furuichi Y., 723
Furukawa K., 689
Gambhir J.K., 625
Gaspari M., 625
Guru Raj H., 625
Harada A., 619
Harada S.-i., 651
Hatano N., 711
Honma S., 689
Horigome T., 689
Hu J., 679
Huang C.-H., 661
Huang H.-M., 645
Ishii K., 689
Iwase Y., 689
Jhuang P.-J., 661
Joshi P., 625
Kabir M.E., 723
Kameshita I., 711
Kanno T., 689
Kar P., 765
Kawabata S.-i., 611
Kawai H., 743
Kawakami T., 633
Khademi F., 735
Kimura S., 671
Kirita T., 633
Komiyama T., 723
Krishnan S., 625
Krishnaswamy S., 723
Kumar Tyagi T., 625
Lee W.-H., 645
Lee Y.-L., 645
Leng X., 679
Li L., 751
Liang D., 751
Liao X., 679
Liu F.-H., 645
Makino K., 697
Matsuzaki M., 689
Miyakawa Y., 689
Miyamoto M., 723
Morisugi T., 633
Mostafaie A., 735
Munesue S., 651
Muta T., 611
Nagamine T., 711
Nakamura M., 705
Nie X., 751
Ohe K., 651
Oka S., 671
Ota R., 671
Pack S.P., 697
Ponnan P., 625
Prasad A.K., 625
Priya N., 625
Qiu Z., 751
Raftery M.A., 743
Rastogi R.C., 625
Saluja D., 625
Samanta K., 765
Saso L., 625
Scumaci D., 625
Shaikh S., 765
Shimomura S., 711
Singh P., 625
Singh Parmar V., 625
Sueyoshi N., 711
Sugiura T., 671
Tanaka Y., 633
Toshida T., 671
Wang S., 751
Wang Y., 751
Wang Z., 751
Watanabe T., 651
Wu Y.-H., 661
Yamamoto H., 651
Yamamoto Y., 651
Yamashita A., 671
Yonekura H., 651
Zhang R., 751
Zhao G., 679
Zhu D., 751

COVER: Lipopolysaccharide (LPS)-triggered hemocyte exocytosis and the resulting innate immune responses in horseshoe crabs. In response to stimulation by LPS, granular components are rapidly secreted by the hemocyte via a G protein-dependent exocytic pathway. The hemocyte stores a variety of defense molecules including coagulation factors, lectins, antimicrobial peptides, and transglutaminase substrates. A serine protease zymogen, factor C, functions as an LPS sensor on the hemocyte surface and an initiator of hemolymph coagulation. Alternatively, activated factor G in the presence of β -1,3-D-glucans also triggers the coagulation cascade. Factor C and factor G independently serve to couple the recognition of pathogen-associated molecular patterns to form a physical barrier at the site of microbial invasion. LPS-induced hemocyte exocytosis leads not only to coagulation but also activates a sophisticated innate immune response network that culminates in immobilization and killing of pathogens. [See Kawabata and Muta; p. 611].