molecular interventions
pharmacological perspectives from biology, chemistry and genomics

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DEPARTMENTS

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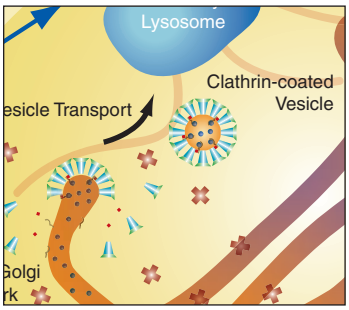
VIEWPOINTS



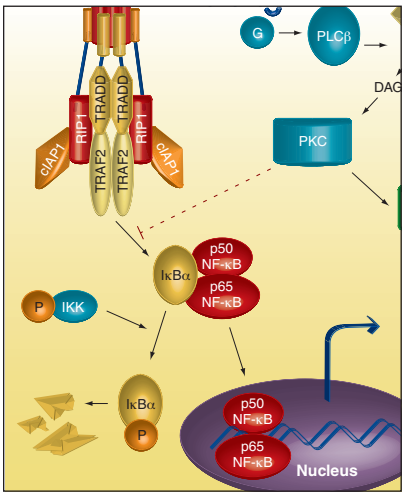
page 294
Enhanced secretory trafficking might lead to better immune responses

294 EBAG9: Boosting Secretory Function to Bolster Cancer Cell Cytolysis

Cytotoxic-T-lymphocyte- and natural-killer-cell-mediated immune surveillance is crucial for preventing development and growth of malignancies. A recent intriguing study by Rüder et al. demonstrates that the estrogen receptor-binding fragment-associated gene 9 (EBAG9) protein acts as a novel inhibitor of cytotoxic immune responses, potentially influencing growth and spread of malignancies. EBAG9 does this by suppressing production of secretory lysosomes through negative regulation of adaptor proteins involved in intracellular vesicle transfer. Secretory lysosomes contain cell lysis effector molecules released into the immune synapse formed between cytotoxic immune cells and their target tumor cells. Thus, in addition to their direct ER-mediated suppressive effect on estrogen-dependent tumor growth, anti-estrogens may "switch off" EBAG9, thereby bolstering immune cytotoxicity against these cancer cells.

Tomoshige Kino and George P. Chrousos

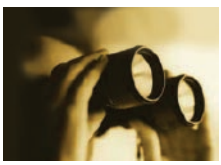
299 Serotonin in the Periphery: Attenuating TNF-Mediated Inflammation



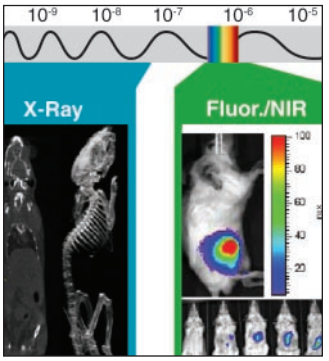
page 299
5-HT influences immune response and inflammation

Although the influence of neural activity on immune and inflammatory pathways is undisputed, details of how neurotransmitters modulate signaling by cytokine and antigen receptors remain sketchy. New findings on the influence of the serotonin receptor subtype 2A (5-HT2A) and receptors for Tumor Necrosis Factor (TNF) suggest that in some cases there may be direct interactions between neurotransmitter and cytokine receptor signaling. These findings have implications for the many psychiatric patients on medications that modulate serotonin signaling and suggest that neurotransmitter receptors should not be ignored as candidate targets for immunoregulation.

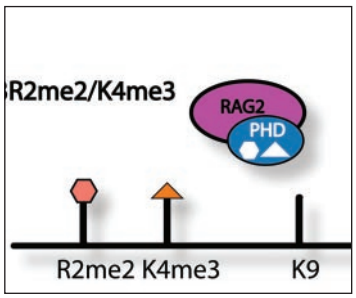
Martin Pelletier and Richard M. Siegel



REVIEWS



page 302
New vistas in pharmacology



page 314
Reading the histone code