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**Author Block:** **GEORGE TALBOT, MD.;**  
Consultant, St. Davids, PA.

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Background: Infections caused by gram-negative bacilli (GNB) have become an increasing concern to infectious diseases physicians, especially those caring for hospitalized patients with severe infections. These organisms, especially *Pseudomonas aeruginosa* (*Pa*), *Acinetobacter baumannii* (*Ab*), *Stenotrophomonas maltophilia*, and *Klebsiella* spp., have developed multiple resistance mechanisms, including extended-spectrum beta-lactamases (ESBLs), carbapenemases, efflux pumps and decreased permeability. Unfortunately, a major focus of pharmaceutical development in recent years has been gram-positive pathogens, especially methicillin-resistant *Staphylococcus aureus* (MRSA). Accordingly, the Antimicrobial Availability Task Force of IDSA has characterized selected GNB as reflecting a "mismatch between medical need and the late-stage development pipeline".

Methods: Websites of companies involved in anti-infective research were accessed to identify molecules with anti-GNB activity.

Results: Molecules potentially efficacious against GNB in the phase 2-3 pipeline include doripenem (JNJ), a carbapenem with enhanced activity vs. *Pa*; R1558 (Roche-Sankyo; CS-023), an anti-MRSA carbacephem; ceftaroline (Cerexa; PPI-0903), an anti-MRSA cephalosporin with a gram-negative spectrum comparable to that of ceftriaxone; and ceftobiprole (Basilea, JNJ), an anti-MRSA cephalosporin with clinically meaningful gram-negative activity. The glycylycylcline tigecycline has in vitro activity vs. ESBLs and *Ab*, with some clinical data to support efficacy. Earlier-stage compounds include efflux pump inhibitors (e.g., Mpex, Cumbre); novel beta-lactamase inhibitors (e.g., Novexel, NXL104); a glycylycylcline (Paratek, PTK0796); carbapenems (e.g., Meiji, ME1036; Blanca, BP102; Protez/Sumitomo, SM216601); and one anti-*Pa* molecule (Astellas, FR264205).

Conclusions: More robust discovery and development efforts for novel anti-GNB molecules are urgently needed.