

Spectinomycin (SPC)	4,5-Disubstituted actinamine	Clinical; veterinary	NA	NA	NA
Streptomycin (STR)	4-Monosubstituted Streptamine	Clinical; veterinary; agriculture	Decreased diversity; abundance of <i>Ruminococcaceae</i> and <i>Bacteroidaceae</i> ; bile acid metabolism and other pathways affected	Diabetes type 1; inhibition of cancer therapy; increased opportunistic infections	Sekirov et al. (2008), Antunes et al. (2011), Candon et al. (2015), Lichtman et al. (2016), and Routy et al. (2018)
Tobramycin (TOB)	4,6-Disubstituted 2-DOS	Clinical; veterinary	NA	NA	NA
<i>Semisynthetic</i>					
Amikacin (AMK)	HABA insertion; 4,6-disubstituted 2-DOS	Clinical; veterinary	NA	NA	NA
Arbekacin (ABK)	HABA insertion; 4,6-disubstituted 2-DOS	Clinical	NA	NA	NA
Dibekacin (DBK)	HABA insertion; 4,6-disubstituted 2-DOS	Clinical	NA	NA	NA
Isepamicin (ISP)	HABA insertion; 4,6-disubstituted 2-DOS	Clinical	NA	NA	NA
Netilmicin (NTM)	HABA insertion; 4,6-disubstituted 2-DOS	Clinical; veterinary	NA	NA	NA
<i>Next-generation neoglycosides</i>					
Plazomicin (PLZ)	Sisomicin derived; HABA insertion	<i>In phase III clinical trials</i>	NA	NA	NA

Source: Adapted from Piepersberg et al. (2007) and Becker and Cooper (2013).

Aminoglycosides are sorted by naturally occurring, semisynthetic, or next generation. The core-derived structures are included. AGAs' common use is highlighted to reflect on spread and constant contact with the human gut microbiome. Effect on human gut microbiome summarizes genomic, proteomic, and metabolic data. Pathologies and diseases known to be related with uptake of AGAs are also included.

2-DOS, 2-deoxystreptamine; AGA, aminoglycoside antibiotic; HABA, 4-hydroxy-2-aminobutyric acid; NA, information not available to our knowledge.