Table 1.1 Overview of major aminoglycoside antibiotics (AGAs) and their distinctive features and effect on the human gut microbiome.

AGA	Core-derived structure	Common use	Effect on human gut microbiome	Related pathology or disease	Microbiome-related studies
Naturally occurring					
Apramycin (APR)	4-Monosubstituted 2-DOS	Veterinary	NA	NA	NA
Butirosin (BTR)	4,5-Disubstituted 2-DOS	Biochemical reagent	NA	NA	NA
Fortimicin (FOR)	6-Monosubstituted fortamine	Biochemical reagent	NA	NA	NA
Geneticin (G418)	4,6-Disubstituted 2-DOS	Medicine; biochemical reagent	NA	NA	NA
Gentamycin (GEN)	4,6-Disubstituted 2-DOS	Clinical; veterinary; agriculture	Decreased diversity; prevalence of *Enterobacter* spp.; reduced levels of SCFAs and other metabolites	Necrotizing enterocolitis; Crohn's; increased opportunistic infections	Zhao et al. (2013), Greenwood et al. (2014), and Shankar et al. (2015)
Hygromycin (HYG)	5-Monosubstituted 2-DOS	Veterinary; biochemical reagent	NA	NA	NA
Istamycin (IST)	Fortamine-related	Biochemical reagent	NA	NA	NA
Kanamycin (KAN)	4,6-Disubstituted 2-DOS	Clinical; veterinary; biochemical reagent	NA	NA	NA
Kasugamycin (KSG)	Streptamine-related	Agriculture	NA	NA	NA
Lividomycin (LIV)	4,5-Disubstituted 2-DOS	Biochemical reagent	NA	NA	NA
Neomycin (NEO)	4,5-Disubstituted 2-DOS	Clinical; veterinary	Long-term changes in diversity with oral administration	NA	Kim et al. (2017)
Paromomycin (PAR)	4,5-Disubstituted 2-DOS	Clinical; veterinary	Decreased abundance and diversity	NA	Heinsen et al. (2015)
Ribostamycin (RIB)	4,5-Disubstituted 2-DOS	Clinical	NA	NA	NA
Sisomicin (SSM)	4,6-Disubstituted 2-DOS	Clinical	NA	NA	NA