| SPEECH INFORMATION (For Conference Program Book) | |
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| **Topic** | **From Gut Microbes to Breakthroughs: Shaping the Future of GLP-1 Drug Development in Metabolic Health** |
| **Abstract** | The gut microbiota plays a crucial role in regulating metabolism and overall health, with microbial imbalance closely linked to obesity, insulin resistance, and cardiovascular disease. Among microbial metabolites, trimethylamine N-oxide (TMAO) has been recognized as a key risk factor for cardiovascular conditions. In our preclinical studies, *Bifidobacterium longum* LWHK1005 markedly reduced plasma TMAO levels, demonstrating strong potential for cardiovascular protection. We also developed a synbiotic formulation combining *Bifidobacterium* with polyphenols, which effectively reduced body fat and increased GLP-1 secretion in individuals, possibly through the activity of bioactive microbial metabolites. *Akkermansia muciniphila*, a next-generation probiotic, is known to promote GLP-1 secretion and reduce obesity; we isolated 112 strains from healthy Taiwanese individuals. Among them, *A. muciniphila* LWHK0003 significantly improved hepatic steatosis and inflammation in animal models, highlighting its potential as a treatment for metabolic dysfunction–associated steatotic liver disease. Overall, these discoveries highlight the potential of microbiome-based innovations as natural and safer alternatives for preventing and treating metabolic diseases. |