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Singapore: China based 3SBio has entered into an exclusive licensing deal with Korea's PharmAbcine for the development, manufacturing and marketing of DIG-KT, a bi-specific monoclonal antibody (mAb) targeting both VEGFR2/KDR and Tie-2 pathways for cancer in China, Taiwan, Hong Kong, Macau and Korea.

Angiogenesis is correlated with disease progression and poor prognosis in many tumor types, such as colon, lung, breast and pancreatic cancers. Two key pathways, VEGF / VEGFR2 (KDR), as well as angiopoietin (ANG) / Tie-2, act cooperatively to induce tumor angiogenesis and metastasis.

It has been found that combined blockade of VEGF/VEGFR2 and ANG/Tie-2 pathways results in additive effects on vascular regression and anti-tumor efficacy. Researchers from PharmAbcine have developed DIG-KT, a bi-specific mAb to treat solid tumors. DIG-KT binds VEGFR2/KDR and Tie-2 simultaneously, and blocks binding of VEGFR2 ligands, including VEGF-A, VEGF-C and VEGF-D, as well as Tie-2 ligands, including Ang1, Ang2, Ang3 and Ang4. Consequently, DIG-KT inhibits ligand-stimulated activations of both VEGFR2/KDR and Tie-2, therefore inhibits ligand-induced angiogenesis, proliferation, and migration of human endothelial cells.

Current anti-VEGF drugs such as bevacizumab, sorafenib and aflibercept are efficacious. Still, over time cancer cells develop resistance via induction of ANG/Tie-2 pathway, an alternate route to angiogenesis. Drugs targeting the Tie-2 pathway alone may have similar limitations. DIG-KT, by concurrent dual receptor inhibition of VEGFR2/KDR and Tie-2, is expected to be more efficacious in both bevacizumab-naÃ?Æ?Ã?Â¨ve patients and those failing VEGF therapy due to development of resistance. Preclinical proof-of-concept, including in vitro binding assays and in vivo efficacy in animal models, has demonstrated superiority of DIG-KT over current drugs in bevacizumab-resistant murine models of glioblastoma and pancreatic cancer.

"This is our second collaboration with PharmAbcine," said, Dr Jing Lou, Chairman and CEO, 3SBio. "We are impressed by PharmaAbcine's high scientific standards and look forward to working with them as we seek regulatory approvals to move

DIG-KT into clinical trials in China and notably Korea, in line with our strategy to develop 3SBio's development capabilities in key international markets. 3SBio continues to seek opportunities to expand its biologics pipeline. Novel mAb candidates, especially bi-specific mAbs, shed light on the treatment for refractory or metastatic cancers, such as pancreatic and breast cancers, which is consistent with 3SBio's core therapeutic areas of oncology and nephrology."

Dr Jin-San Yoo, president and CEO, PharmAbcine said, "DIG-KT is a novel bi-specific mAb with great potential to treat refractory tumors. We are looking forward to working with them to develop this mAb in China and Korea, so that tens of thousands of patients suffering for cancers and other severe diseases can benefit from this drug candidate."