Glioblastomas are the most frequent primary brain tumors and remain among the most incurable cancers. Connexin43 (Cx43), the main constituent of gap junctions, has been traditionally considered a tumor suppressor protein in glioblastoma; however, Cx43 can also play pro-tumorigenic roles, suggesting that very specific tools should be used to mimic specifically the antitumor effects of Cx43. The C-terminal domain of Cx43 interacts with a plethora of molecules and acts as an intracellular signaling hub. This is the case for the proto-oncoprotein c-Src, which is recruited by Cx43 together with its inhibitors CSK and PTEN. This interaction causes the inhibition of c-Src and its downstream oncogenic pathways. Dr. Tabernero designed a cell-penetrating peptide, TAT-Cx43266-283, that recapitulates the inhibition of c-Src by Cx43. Malignant gliomas have high oncogenic c-Src activity; moreover, cancer stem cells, including glioblastoma stem cells (GSCs), rely on the activity of this oncoprotein for metabolic reprogramming, survival, stemness, and invasion. Importantly, TAT-Cx43266-283 inhibits c-Src activity and consequently exerts potent antitumor effects specifically in glioblastoma cells without affecting healthy brain cells, such as neurons and astrocytes. In brief, Tabernero found that TAT-Cx43266-283 reduces migration, invasion, metabolic plasticity and survival in mice and human GSCs, including freshly removed surgical specimens studied as undissociated glioblastoma blocks. Moreover, TAT-Cx43266-283 inhibits c-Src, impairs malignant growth, and enhances survival in mouse models in vivo, without exerting toxicity in endogenous brain cells, supporting the translational potential of this peptide for the treatment of glioblastoma.