Ingenuity® Science Spotlight:

Articles featured in the Ingenuity Science Spotlight represent some of the best and most diverse examples of how IPA® has contributed to research across multiple platforms, research areas, and research goals.

Anti-angiogenic activity of the mutant Dutch A• peptide on human brain microvasular endothelial cells.

Daniel Paris, Ghania Ait-Ghezala, Venkatarajan S. Mathura, Nikunj Patel, Amita Quadros, Vincent Laporte, Mike Mullan. Brain Res Mol Brain Res. 2005 May 20;136(1-2):212-30.

http://www.ncbi.nlm.nih.gov/pubmed/15893605?dopt=Abstract

Cerebral amyloid angiopathy, the deposition of • -amyloid (A•) in the cerebrovasculature, characterizes a rare disorder called hereditary cerebral hemorrhage with amyloidosis-Dutch type (HCHWA-D). A single point mutation of the • -amyloid precursor protein leads to HCHWA-D, resulting in recurrent hemorrhagic stroke at middle age, vascular dementia, and fatal cerebral bleeding.

Wild-type A• has been shown to be anti-angiogenic, and both structural and functional cerebromicrovascular abnormalities are associated with Alzheimer's disease. This study found Dutch A• to be an even more potent inhibitor of angiogenesis. To better understand the molecular mechanisms that cause the anti-angiogenic activity of Dutch A• , researchers profiled genes that were differentially expressed in human brain microvascular endothelial cells exposed to an anti-angiogenic dose of Dutch A• . The genes affected by Dutch A• were uploaded to IPA and network analysis revealed that exposure to Dutch AB dysregulates networks involved in cellular migration, cellular proliferation, angiogenesis, atherosclerosis, and tumorigenesis.