JAM-A Acts via C/EBP-α to Promote Claudin-5 Expression and Enhance Endothelial Barrier Function
Nikolaos Kakogiannos, Laura Ferrari, Costanza Giampietro, Anna Agata Scalise, Claudio Maderna, Micol Ravà, Andrea Taddei, Maria Grazia Lampugnani, Federica Pisati, Matteo Malinverno, Emanuele Martini, Ilaria Costa, Michela Lupia, Ugo Cavallaro, Galina V Beznoussenko, Alexander A Mironov, Bethania Fernandes, Noemi Rudini, Elisabetta Dejana, Monica Giannotta.
Circ Res. 2020 Sep 25;127(8):1056-1073. doi: 10.1161/CIRCRESAHA.120.316742.

Key findings

1. A signalling circuit that involves JAM-A and claudin-5 and regulates endothelial permeability in vivo and in vitro has been described.

2. C/EBP-α acts as a transcription factor to trigger expression of claudin-5 downstream of JAM-A, thus restricting endothelial permeability.

3. JAM-A–C/EBP-α–mediated regulation of claudin-5 is dysregulated in the ovarian cancer and glioblastoma vasculature.

4. The elucidation of this pathway might help to identify new therapeutic targets for diseases associated with vascular barrier dysfunction.