Cathepsin C

Cathepsin C appears to be a central coordinator for activation of many serine proteases in immune/inflammatory cells.

Cathepsin C catalyses excision of dipeptides from the N-terminus of protein and peptide substrates, except if (i) the amino group of the N-terminus is blocked, (ii) the site of cleavage is on either side of a proline residue, (iii) the N-terminal residue is lysine or arginine, or (iv) the structure of the peptide or protein prevents further digestion from the N-terminus.

Cathepsin C (CTSC)-Ras-Related Protein Rab-38 (RAB38) was the most common fusion and was detected in 10 of 66 (15%) Brain Arteriovenous Malformations samples. In CTSC-RAB38 fusion-positive samples, CTSC and RAB38 expression was significantly increased and activated immune/inflammatory signaling. Clinically, CTSC-RAB38 fusion bAVM cases had a higher hemorrhage rate than non-CTSC-RAB38 bAVM cases ($p < 0.05$). The study identified recurrent CTSC-RAB38 fusion transcripts in bAVMs, which may be associated with bAVM hemorrhage by promoting immune/inflammatory signaling [1].

1)
Yan Z, Fan G, Li H, Jiao Y, Fu W, Weng J, Huo R, Wang J, Xu H, Wang S, Cao Y, Zhao J. The CTSC-RAB38 Fusion Transcript Is Associated With the Risk of Hemorrhage in Brain Arteriovenous Malformations. J Neuropathol Exp Neurol. 2020 Oct 29:nlaa126. doi: 10.1093/jnen/nlaa126. Epub ahead of print. PMID: 33120410.

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