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Recent publications

Following you find a brief abstract of a scientific publication concerning LEUKOCARE's technologies. Please find the full text article at the given reference.

Biochem Biophys Res Commun. 2005 Apr 8;329(2):616-23.

Degradation of microvascular brain endothelial cell beta-catenin after co-culture with activated neutrophils from patients undergoing cardiac surgery with prolonged cardiopulmonary bypass.

SCHULLER AM, WINDOLF J, BLAHETA R, CINATL J, KREUTER J, WIMMER-GREINECKER G, MORITZ A, SCHOLZ M.

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The adhesion of highly activated neutrophils to cerebral microvascular endothelial cells (MVECs) may contribute to disruption and hyperpermeability of the blood-brain barrier (BBB) after cardiac surgery with prolonged cardiopulmonary bypass (CPB). A correlation between CPB duration and neutrophil-mediated BBB damage has not been investigated on the cellular level yet. Therefore, we studied the effects of neutrophils from cardiac surgery patients with CPB time <80 min (group I; n=8) and >80 min (group II; n=8) on the integrity of cultured porcine MVEC. Ex vivo, neutrophils of group II but not of group I significantly degraded the zonula adherens molecule beta-catenin whereas VE-cadherin and occludin were not modified. The transendothelial electric resistance as a measure for the integrity of the endothelial monolayers was reduced over time in both groups. In conclusion, prolonged CPB time entails neutrophil-mediated decrease in MVEC beta-catenin expression, and thus may be an important trigger for BBB disruption.