Cell surface interactions at the vascular wall

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references


Reactome database release: 71

This document contains 4 pathways and 33 reactions (see Table of Contents)
Cell surface interactions at the vascular wall

Stable identifier: R-HSA-202733

Compartments: plasma membrane

Leukocyte extravasation is a rigorously controlled process that guides white cell movement from the vascular lumen to sites of tissue inflammation. The powerful adhesive interactions that are required for leukocytes to withstand local flow at the vessel wall is a multistep process mediated by different adhesion molecules. Platelets adhered to injured vessel walls form strong adhesive substrates for leukocytes. For instance, the initial tethering and rolling of leukocytes over the site of injury are mediated by reversible binding of selectins to their cognate cell-surface glycoconjugates.

Endothelial cells are tightly connected through various proteins, which regulate the organization of the junctional complex and bind to cytoskeletal proteins or cytoplasmic interaction partners that allow the transfer of intracellular signals. An important role for these junctional proteins in governing the transendothelial migration of leukocytes under normal or inflammatory conditions has been established.

This pathway describes some of the key interactions that assist in the process of platelet and leukocyte interaction with the endothelium, in response to injury.

Literature references


**Editions**

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Binding of GPVI:Fc Epsilon R1 gamma receptor complex with collagen

Location: Cell surface interactions at the vascular wall

Stable identifier: R-HSA-114577

Type: binding

Compartments: extracellular region, plasma membrane