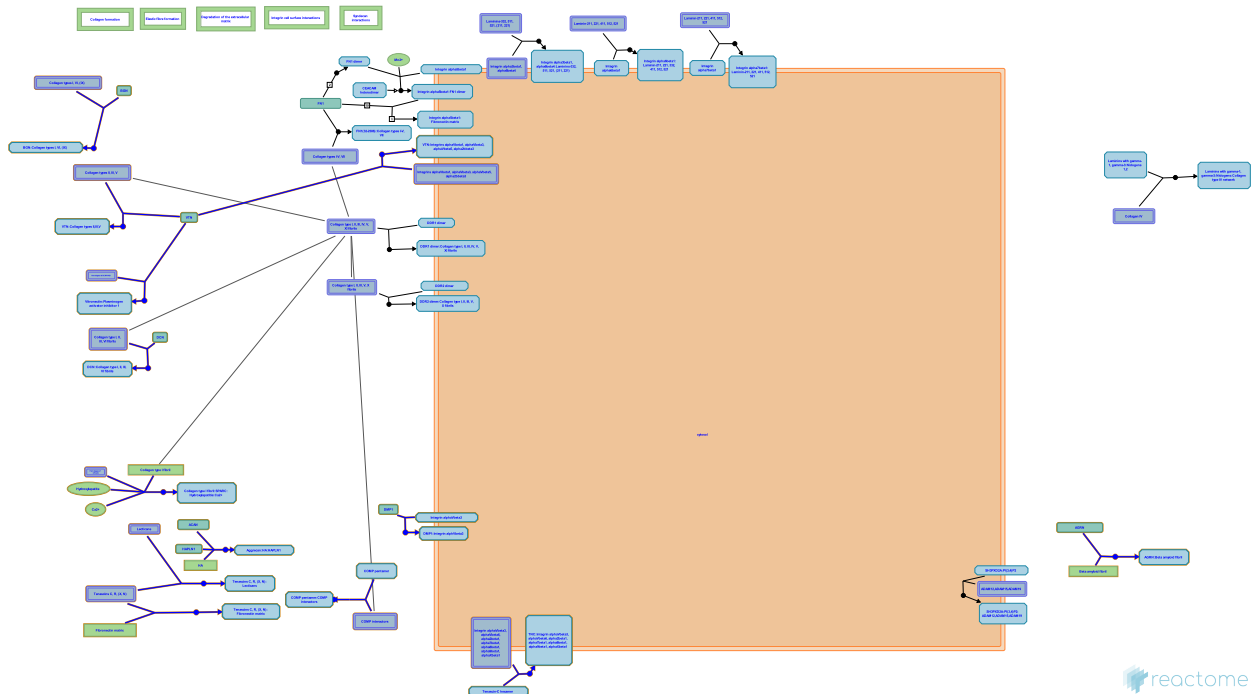


# ECM proteoglycans



European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

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This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the [Reactome Textbook](https://reactome.org/textbook/).

03/05/2024

## 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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

## Literature references

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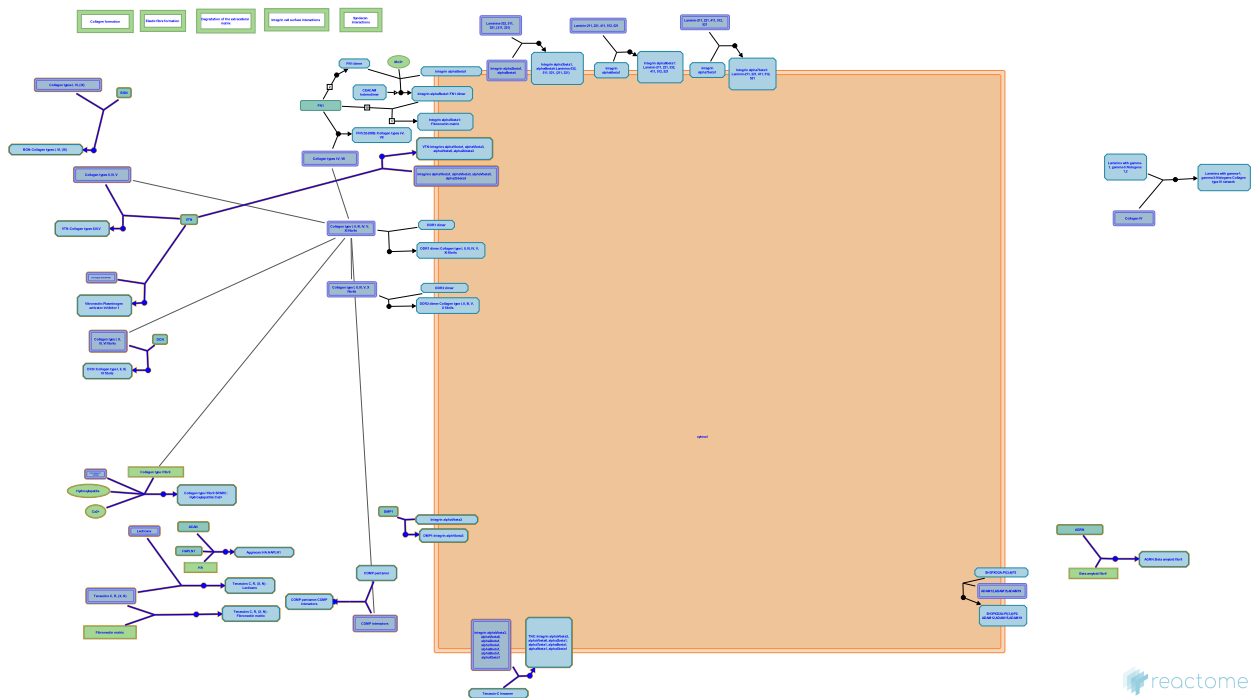
Reactome database release: 88

This document contains 1 pathway and 13 reactions ([see Table of Contents](#))

## ECM proteoglycans ↗

Stable identifier: R-SSC-3000178

Inferred from: ECM proteoglycans (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## DCN binds collagen I, II, III, VI fibrils ↗

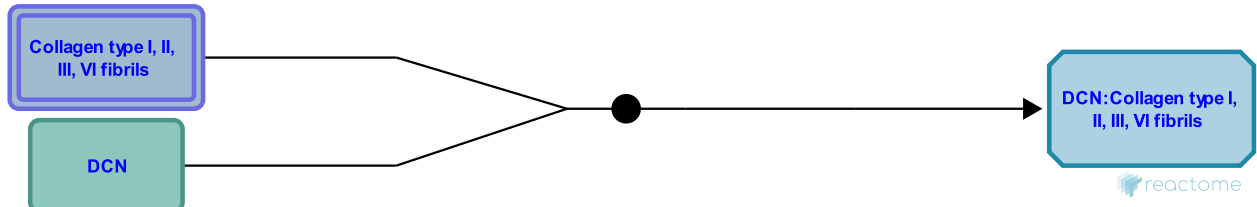
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2327909

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [DCN binds collagen I, II, III, VI fibrils \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## BGN binds Collagen types I, VI, (IX) ↗

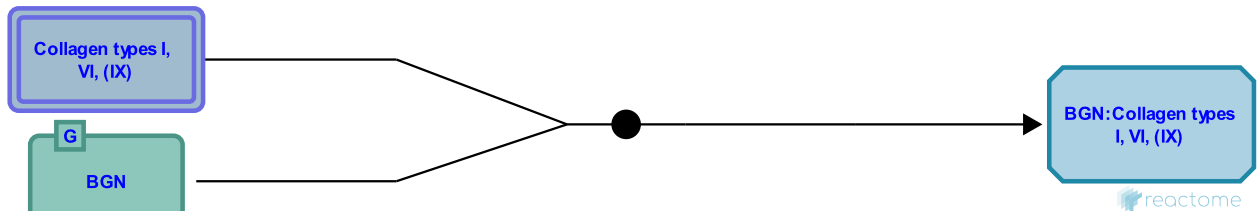
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2466106

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [BGN binds Collagen types I, VI, \(IX\) \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## VTN binds collagens II, III and V ↗

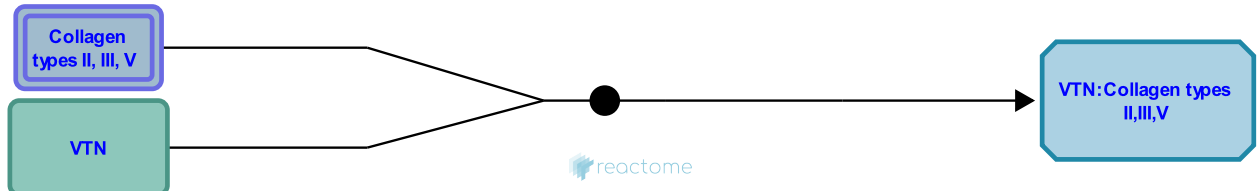
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2396370

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [VTN binds collagens II, III and V \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## VTN binds integrins alphaVbeta1, alphaVbeta3, alpha3beta5, alphaIIBbeta3 ↗

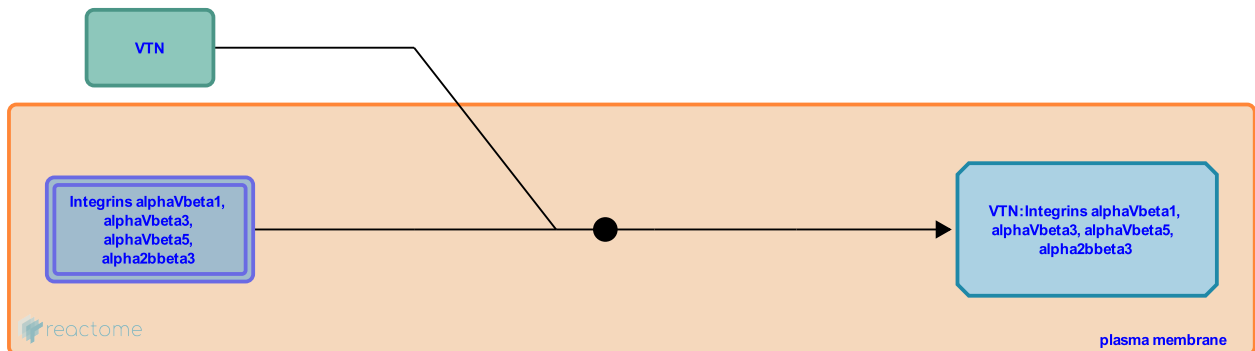
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2426471

**Type:** binding

**Compartments:** plasma membrane, extracellular region

**Inferred from:** [VTN binds integrins alphaVbeta1, alphaVbeta3, alpha3beta5, alphaIIBbeta3 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## VTN binds Plasminogen activator inhibitor- 1 [↗](#)

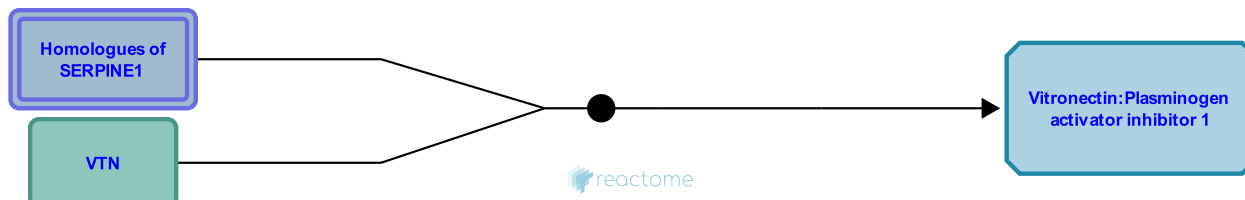
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2396079

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [VTN binds Plasminogen activator inhibitor- 1 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>



## AGRN binds Beta amyloid fibril via GAG chains ↗

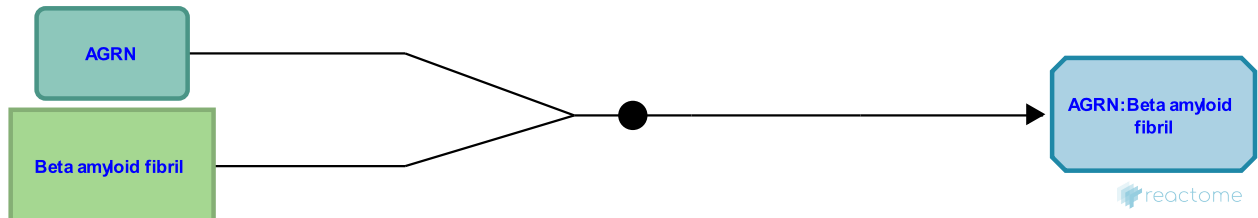
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2467665

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [AGRN binds Beta amyloid fibril via GAG chains \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## SPARC binds Collagen type I fibril, hydroxylapatite and Ca<sup>2+</sup> ↗

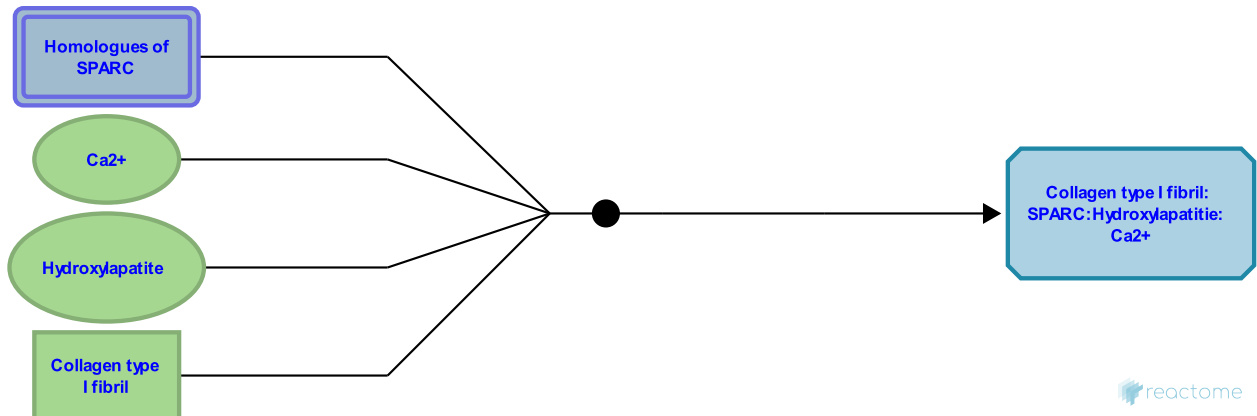
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2424243

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [SPARC binds Collagen type I fibril, hydroxylapatite and Ca<sup>2+</sup> \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## TNC binds Integrin alphaVbeta3, alphaVbeta6, alpha2beta1, alpha7beta1, alpha8beta1, alpha9beta1, alphaXbeta1 ↗

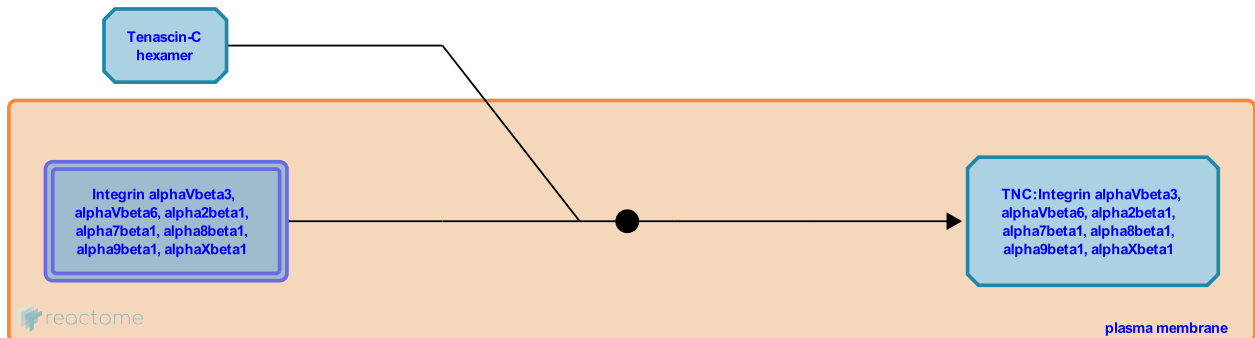
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2681667

**Type:** binding

**Compartments:** plasma membrane, extracellular region

**Inferred from:** [TNC binds Integrin alphaVbeta3, alphaVbeta6, alpha2beta1, alpha7beta1, alpha8beta1, alpha9beta1, alphaXbeta1 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## Tenascins C, R, (X, N) bind lecticans ↗

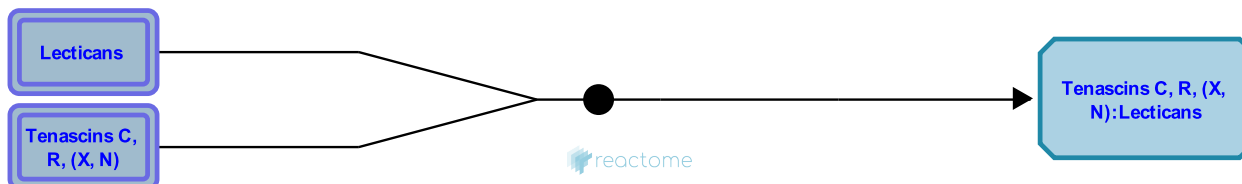
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2424246

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [Tenascins C, R, \(X, N\) bind lecticans \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## Tenascins C, R, (X, N) bind fibronectin matrix ↗

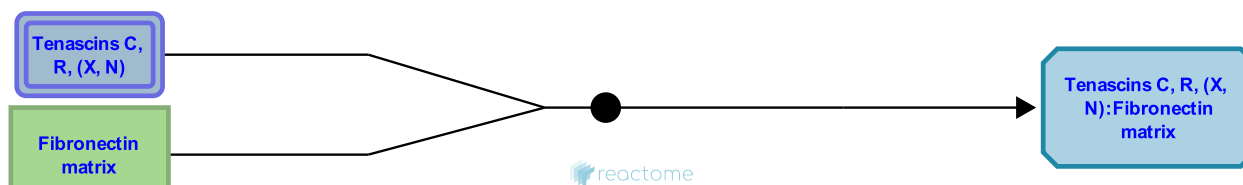
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2681681

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [Tenascins C, R, \(X, N\) bind fibronectin matrix \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## COMP binds collagen, fibronectin, aggrecan and matrilins [↗](#)

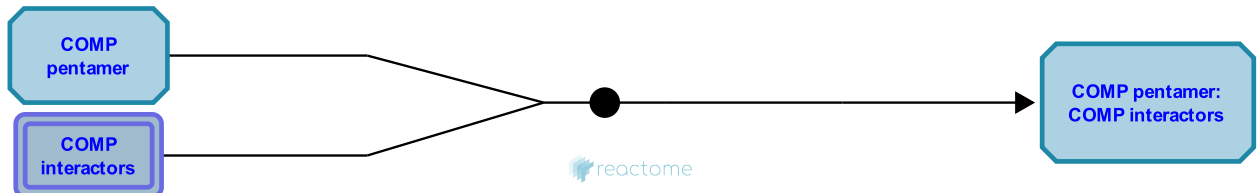
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2424252

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [COMP binds collagen, fibronectin, aggrecan and matrilins \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## Aggrecan binds Hyaluronan and HAPLN1 ↗

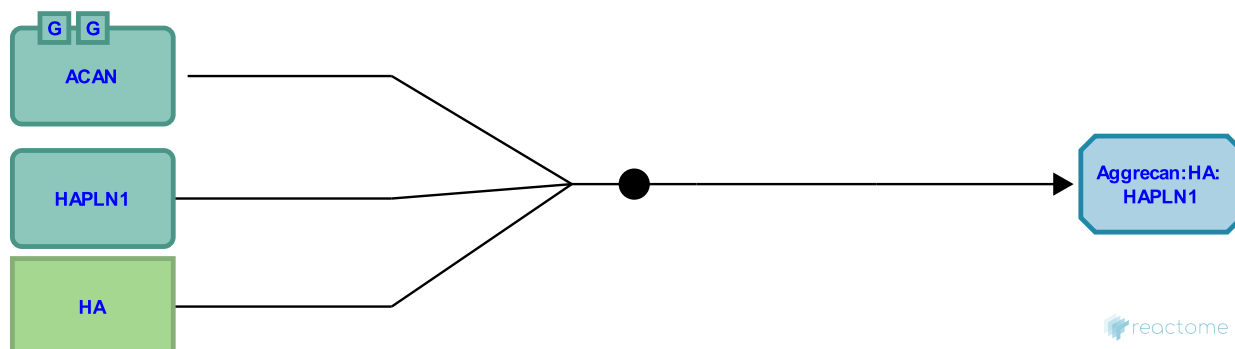
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-2318623

**Type:** binding

**Compartments:** extracellular region

**Inferred from:** [Aggrecan binds Hyaluronan and HAPLN1 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

## Dentin matrix protein 1 binds integrin alphaVbeta3 ↗

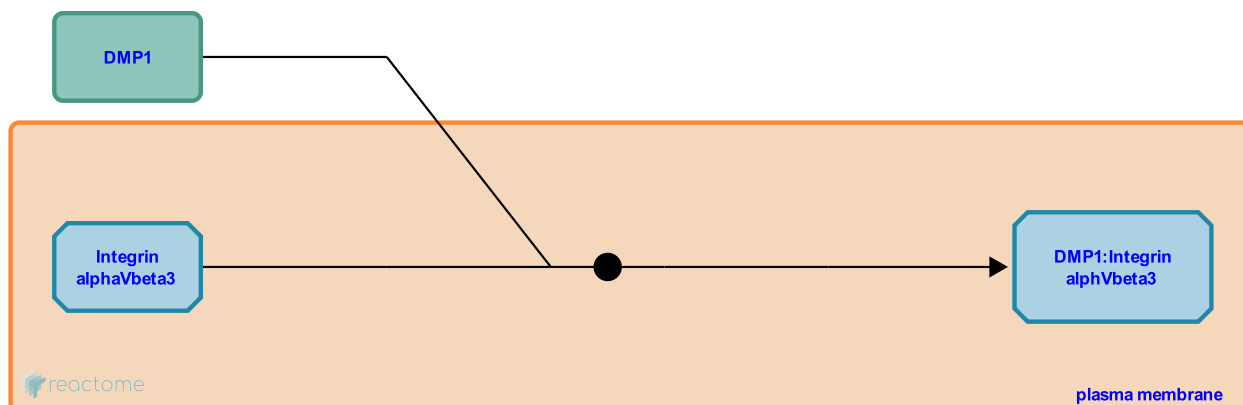
**Location:** [ECM proteoglycans](#)

**Stable identifier:** R-SSC-4086200

**Type:** binding

**Compartments:** plasma membrane, extracellular region

**Inferred from:** [Dentin matrix protein 1 binds integrin alphaVbeta3 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](#) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>



# Table of Contents

Introduction	1
ECM proteoglycans	2
↳ DCN binds collagen I, II, III, VI fibrils	3
↳ BGN binds Collagen types I, VI, (IX)	4
↳ VTN binds collagens II, III and V	5
↳ VTN binds integrins alphaVbeta1, alphaVbeta3, alpha3beta5, alphaIIBbeta3	6
↳ VTN binds Plasminogen activator inhibitor- 1	7
↳ AGRN binds Beta amyloid fibril via GAG chains	8
↳ SPARC binds Collagen type I fibril, hydroxylapatite and Ca <sup>2+</sup>	9
↳ TNC binds Integrin alphaVbeta3, alphaVbeta6, alpha2beta1, alpha7beta1, alpha8beta1, alpha9beta1, alphaXbeta1	10
↳ Tenascins C, R, (X, N) bind lecticans	11
↳ Tenascins C, R, (X, N) bind fibronectin matrix	12
↳ COMP binds collagen, fibronectin, aggrecan and matrilins	13
↳ Aggrecan binds Hyaluronan and HAPLN1	14
↳ Dentin matrix protein 1 binds integrin alphaVbeta3	15
Table of Contents	16