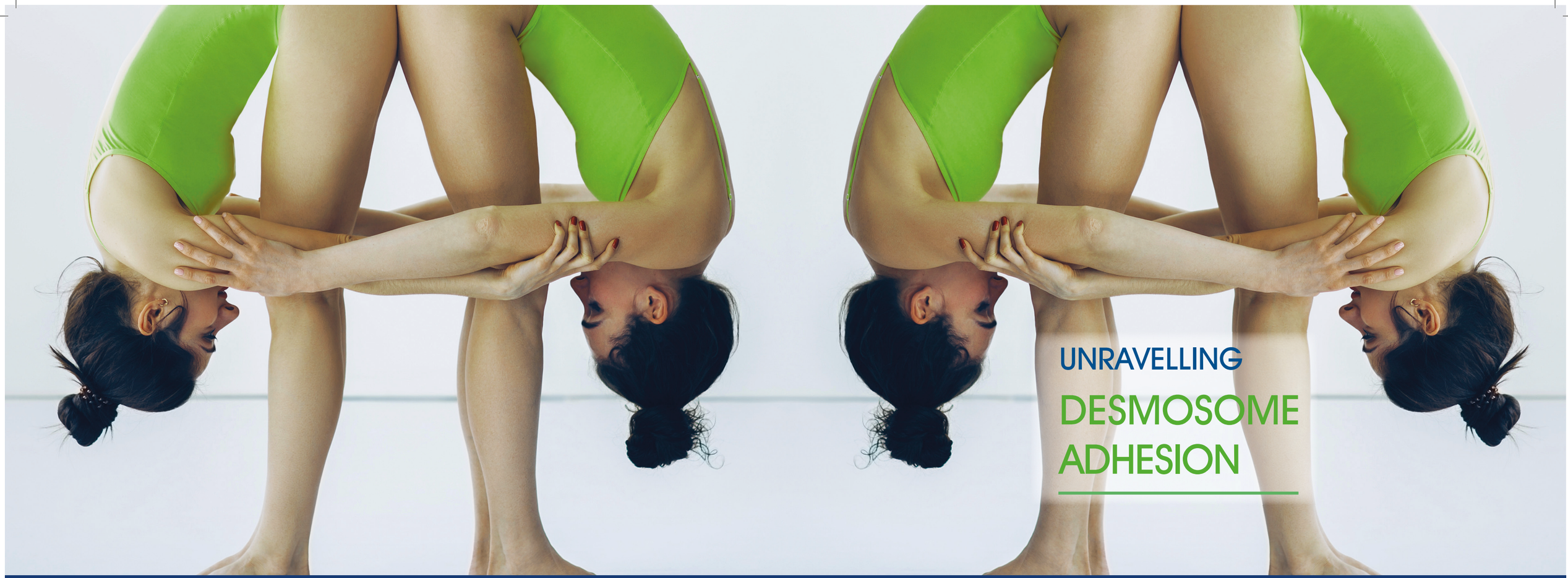

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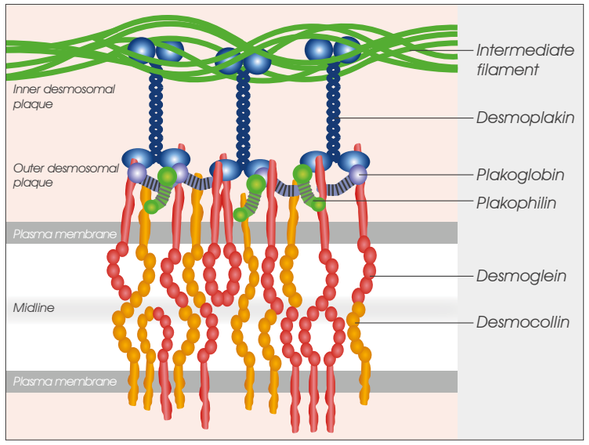
Desmosomes – mechanical stabilizers in cellular junctions

Desmosomes are important structures in the assembly of cell-cell adhesion, where they establish the mechanical coupling of neighboring cells.[1,2,3] A protein complex that is anchored in the intracellular intermediate filament system mediates strong noncovalent interactions between its components and is responsible for the extreme stability of the desmosome unit (see adjacent schematic drawing).[1] Not surprisingly, desmosomal proteins are highly expressed in tissues with intense mechanical stress, such as skin or cardiac muscle. Besides their structural function, proteins of the desmosomal plaque play a role in cell communication and signaling, in particular during cell proliferation, cell migration, and cell assembly in tissue (re-)generation.[2,3]



Desmosome structure with arrangement of major desmosomal components according to Holthöfer et al., 2007[1] (IDP: inner desmosomal plaque, ODP: outer desmosomal plaque).

In cell biology research, desmosome proteins are useful markers for junction formation, disassembly, and differentiation, e.g. in developmental studies. Regenerative biology investigates desmosome function in wound healing or tissue repair.

Role of desmosomes in health and disease

Desmosome malfunction, caused by genetic defects, autoantibodies, or malignancies is involved in the pathogenesis of diseases that especially affect tissues and organs under intense mechanical stress (see table below).[1,2,3] Mutations of desmosomal proteins have been linked to multiple disorders, such as cardiomyopathies, autoimmune, or skin diseases. In addition, the role of misregulated proteins in genesis and progression of many tumors is under intense research.[2,3]

Desmosomal component	Genetic / protein alteration	Disease / phenotype
desmoplakin	nonsense or missense mutations	ARVC (arrhythmogenic right ventricular cardiomyopathy), epidermolysis bullosa, Carvajal/Naxos syndrome with/without dental phenotype
	deletion in mouse	tumor invasion in model of pancreatic carcinogenesis and non-small cell lung cancer
plakophilin 2	nonsense or missense mutations	ARVC, Brugada syndrome
plakophilin 3	elevated mRNA	gastrointestinal cancer
	increased expression	breast cancer, pancreatic cancer
plakoglobin	nonsense and splice site mutations	skin diseases, e.g. skin fragility, palmoplantar keratoderma or generalized epidermolysis
	conditional mouse knock-out	ARVC
desmoglein 1	missense mutations and nucleotide deletion	severe skin dermatitis, multiple allergies, metabolic wasting
desmoglein 2	increased expression	malignant skin carcinomas

Table adapted from Broussard et al., 2015[2]

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Versatile antibody portfolio for all relevant antigens

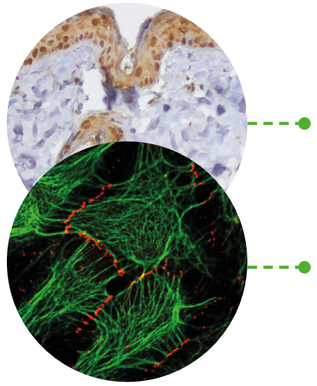
PROGEN features a comprehensive portfolio of over 20 antibodies against all relevant desmosome constituents, such as desmoglein, desmoplakin, plakoglobin, or plakophilin. The different formats are suitable for a wide range of applications in basic research or pathology, such as immunohistochemistry (IHC), western blot (WB), immunocytochemistry (ICC), or immunofluorescence (IF). Many IgGs are available from different hosts to enable co-stainings. In addition, PROGEN offers matching secondary antibodies as well as IHC staining kits to facilitate workflows in research and pathology routine. Most desmosome antibodies are available in ready-to-use sample sizes (600 µL serum) and common markers have been combined to convenient, cost-effective sets (see table below).

The desmosome product line is part of PROGEN's cell adhesion research antibody portfolio that includes other central markers of cellular junctions (e.g. cadherin or catenin). In addition, a wide range of cytoskeletal and keratin antibodies are available for comprehensive studies.

TEST OUR SETS!	ANTIBODIES AGAINST	CAT NO
anti-desmosome sample set 1	desmoglein 1, desmocollin 1, plakophilin 1, plakoglobin, and desmoplakin 1/2	70030
anti-desmosome sample set 2	desmoglein 1/2, plakophilin 2, plakoglobin, and desmoplakin 1/2	70031
anti-desmosome sample set 3	desmoglein 3, desmocollin 3, plakophilin 3, plakoglobin, and desmoplakin 1/2	70032
anti-desmoglein 1-4 sample set	desmoglein 1, 2, 3, and 4	70033
anti-desmocollin 1 & 3 sample set	desmocollin 1 and 3	70034
anti-plakophilin 1-3 sample set	plakophilin 1, 2, and 3	70035

Established premium quality

PROGEN's desmosome antibodies are highly published and have been independently validated for relevant applications. Protocols and data provide useful information for experimental design.



Desmocollin-1 immunohistochemistry of rat dorsal skin (courtesy of J. Heß, University Hospital Heidelberg)

Immunofluorescent double staining of HaCaT cells (red: plakophilin-1, green: cytokeratin; courtesy of L. Langbein, University Hospital Heidelberg)

REFERENCED REVIEWS

[1] Holthoefer B et al., 2007, Structure and function of desmosomes, Int. Rev. Cytol., Vol. 264; ISSN 0074-7696, Elsevier Inc.

[2] Broussard JA et al., 2015, Desmosome regulation and signaling in disease, Cell Tissue Res., 360(3): 501–512

[3] Johnson JL et al., 2014, Desmosomes: regulators of cellular signaling and adhesion in epidermal health and disease, Cold Spring Harb Perspect Med 2014;4:a015297

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