

9th World Congress on

DERMATOLOGY & COSMETOLOGY

June 15-16, 2026 | Paris, France

Cellular Mechanisms of Skin Aging and Regenerative Dermatology: From Molecular Biology to Clinical Practice

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The increasing demand for healthy skin aging has accelerated research into the cellular and molecular mechanisms responsible for cutaneous aging. This presentation reviews advances in keratinocyte biology, dermal fibroblast function, extracellular matrix remodeling, and photo aging. Recent discoveries in cellular senescence, telomere biology, stem cell therapy, and growth factor signalling have opened new opportunities for regenerative

dermatology and aesthetic medicine.

The session examines innovative anti-aging therapies, laser technologies, regenerative biomaterials, and evidence-based cosmeceuticals designed to improve skin structure and function. Advances in molecular diagnostics and personalized dermatological care are enabling clinicians to develop individualized treatment strategies for skin rejuvenation and disease prevention.

Biography

Barbara A. Gilchrest is Professor Emerita of Dermatology at Boston University Chobanian & Avedisian School of Medicine, United States. Her research focuses on skin aging, photobiology, regenerative dermatology, and cellular responses to ultraviolet radiation. She is internationally recognized for her pioneering contributions to skin biology and dermatological research.