Abstract

Determining Stem Cell Viability Through Facial Fat Compartment 안면부 지방 다 같은 지방일까?

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Stem cell therapy represents a transformative approach in aesthetic medicine, offering regenerative potential that significantly enhances facial rejuvenation outcomes. Understanding the distribution, functional characteristics, and behavior of stem cells across different facial adipose tissues is essential for the optimization of clinical strategies and patient-specific interventions.

This study investigates facial stem cell distribution, adipogenic differentiation, and inflammatory profiles through mRNA sequencing analysis of various facial adipose tissues. Specific facial regions analyzed include the buccal fat body, malar fat, nasolabial fat, deep medial cheek fat, and lateral temporal cheek fat, among others. Preliminary data indicate significant differences in stem cell populations, inflammatory profiles, and adipogenic potential across distinct facial compartments. Additionally, this study explores the effects of energy-based devices such as Linear Z (HIFU) on stem cell activity and adipogenesis in both clinical and ex-vivo settings.

Our findings underscore the critical role of dermal white adipose tissue as a key player in facial rejuvenation, highlighting promising modalities such as High-Intensity Focused Ultrasound (HIFU) and other energy based devices. These modalities appear effective in enhancing dermal adipose tissue characteristics and activating intrinsic skin rejuvenation pathways.

This report lays foundational knowledge for personalized and region-specific stem cell therapeutic strategies in facial rejuvenation, aiming to optimize clinical outcomes through tailored treatment protocols based on individual tissue characteristics and patient health conditions.