生体界面制御技術（Bio-Interface Control Technology）

1. 技術の概要
   独自開発の「Bio-Interface Control Water（生体界面制御水）」を用いた、独自の生体界面制御技術により、洗浄性を維持しながら過度な脱脂を抑える処方設計を実現しました。 皮膚表面は、水分と脂質が形成する複雑な界面環境によってバリア機能が維持されています。「Bio-Interface Control Water」は、この皮膚表面の生体界面（Bio-Interface）そのものに着目し、洗浄時の界面環境への影響を考慮して設計された水溶液です。 単に「肌にやさしい成分を加えた水」ではなく、皮膚表面の水分・脂質からなる界面環境に配慮しながら、付着した汚れとの相互作用を制御。洗浄性と皮膚バリアへの配慮の両立を目指した、新しいアプローチです。

2. なぜ「生体界面制御水」が医療・介護現場に適しているのか
   病院や介護施設では、頻繁な洗浄や清拭による皮膚への負担が大きな課題となっています。特に安価ではあるが洗浄力が強すぎる洗浄剤は、汚れだけでなく皮膚表面の必要な脂質まで奪い去り、乾燥や刺激感（皮膚トラブル）の引き金となります。 過度な脱脂を抑える界面制御（ラメラ構造への配慮） 皮膚のバリア機能を担う角質層では、角質細胞間脂質が「ラメラ構造」を形成し、水分保持や外部刺激からの保護において重要な役割を果たしています。一般的な安価な洗浄成分は、その強力な作用によってこの微細な脂質環境まで乱してしまうことがあります。一方、生体界面制御水は、ラメラ構造を含む皮膚の界面環境に配慮しながら、皮膚表面に付着した汚れを除去しやすい状態へ導き、洗浄をサポートします。これにより、必要な皮脂や脂質環境を守りながら、十分な洗浄性を維持する処方設計を実現しました。 物理的・化学的刺激を抑えた洗浄環境の創造 医療・介護の現場において、日々繰り返される「洗う」「拭き取る」という行為に伴う物理的・化学的刺激は、皮膚状態を大きく左右します。 生体界面制御水は、生体環境に極めて近い水溶液設計により、洗浄時の皮膚表面への刺激に配慮し、デリケートな肌を守る洗浄環境を整えます。

3. 技術的アプローチの結論
   この技術は、皮膚に強い化学的作用を及ぼして変化させるのではなく、「皮膚本来が持つバリア環境に配慮しながら、必要な洗浄を行う」という生命の自立性に寄り添う思想に基づいています。 実使用評価においても、肌荒れ、手荒れ、かゆみ、炎症などの皮膚トラブルの軽減傾向が確認されており、継続的なケアが求められる医療・介護環境において、皮膚への負担を抑えながら清潔保持を支える、全く新しい洗浄設計の選択肢（インフラ）を提供します。

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Bio-Interface Control Technology

1. Technology Overview

We have developed a proprietary formulation design that maintains effective cleansing power while preventing excessive stripping of natural oils. This is achieved through our unique Bio-Interface Control Technology, which utilizes our independently developed **"Bio-Interface Control Water"**—an aqueous solution designed with a focus on the biological environment.

The skin's surface maintains its barrier function through a complex interface environment formed by water and lipids. "Bio-Interface Control Water" targets this specific biological interface (Bio-Interface) on the skin's surface, featuring a solution meticulously formulated to consider its impact on the interface environment during cleansing. Rather than being just "water with skin-friendly ingredients added," this new approach respects the delicate moisture-and-lipid interface of the skin's surface. By controlling the interaction with adhered impurities, it aims to achieve a high-level balance between thorough cleansing and skin barrier protection.

2. Why "Bio-Interface Control Water" Is Ideal for Healthcare and Nursing Environments

In hospitals and nursing care facilities, the skin burden caused by frequent washing and wiping poses a significant challenge. In particular, conventional, low-cost cleansers with excessive stripping power remove not only dirt but also the essential lipids from the skin's surface, triggering dryness, irritation, and subsequent skin issues.

- **Interface Control that Prevents Excessive Stripping (Respecting the Lamellar Structure)** In the stratum corneum, which governs the skin's barrier function, intercellular lipids form a **"lamellar structure"** that plays a vital role in moisture retention and protection against external stimuli. While typical low-cost cleansing agents can disrupt this delicate lipid environment due to their harsh action, Bio-Interface Control Water respects the skin's interface environment—including the lamellar structure—while bringing surface impurities into an easily removable state to assist in cleansing. As a result, this formulation design successfully maintains sufficient cleansing efficacy while safeguarding essential sebum and the lipid environment.
- **Creating a Cleansing Environment with Minimal Physical and Chemical Stimuli** In healthcare and nursing settings, the daily, repetitive acts of washing and wiping exert physical and chemical stimuli that significantly impact skin condition. Bio-Interface Control Water features a solution design that closely mirrors the biological environment. By minimizing irritation to the skin's surface during cleansing, it establishes a supportive environment that protects delicate skin.

3. Conclusion of the Technological Approach

Rather than applying harsh chemical actions to alter the skin, this technology is rooted in a philosophy that aligns with the life-sustaining, autonomous power of the skin: **"performing necessary cleansing while respecting the skin's inherent barrier environment."**

In real-world usage evaluations, a clear tendency toward reducing skin issues—such as roughness, chapped hands, itching, and inflammation—has been observed. In healthcare and nursing environments where continuous care is required, this technology provides an entirely new paradigm in cleansing design, supporting cleanliness while minimizing the burden on the skin as a core piece of biological infrastructure.