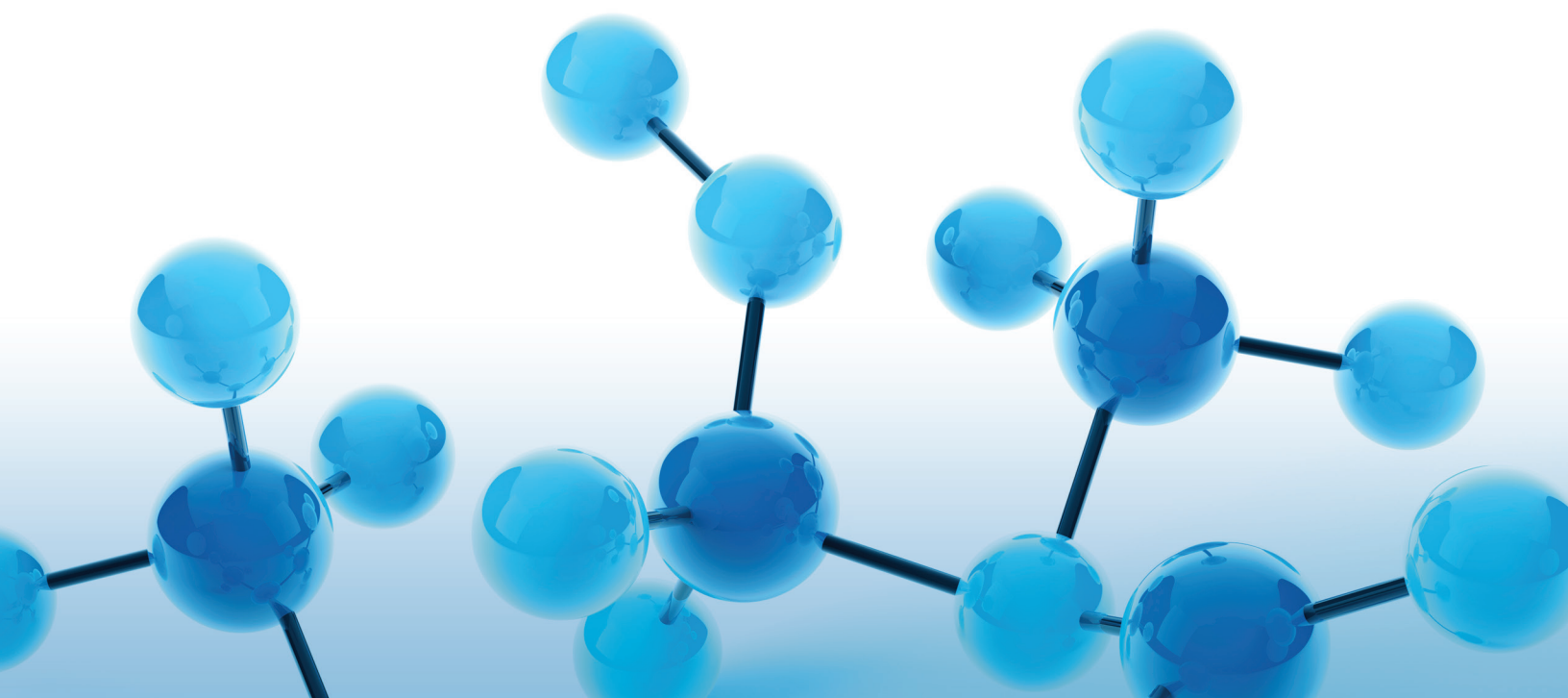


CIRCADIA®



# Meet Circadia

Dear Skin Care Professional,

For three generations, the Pugliese family has been committed to elevating the profession of the esthetician. We have participated in the advancement of skin care for almost forty years. We are honored to continue to utilize our collective resources to advance the practice of professional skin care. Like you, our role has grown and changed over the decades. We welcome your interest in Circadia by Dr. Pugliese and the products and services we offer.

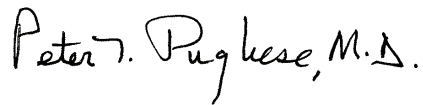
The Circadia product line began with the awareness that certain biological patterns of the skin may be observed and enhanced. A true blend of science and nature, Circadia is the culmination of our research into the aging process and a specialized skill in cosmetic chemistry. Throughout our history as a company, our focus has been to honor the extraordinary structure and function of human skin. It is only through understanding this science that we are able to begin to significantly impact the appearance of the clients who come to us for help. Education is the cornerstone of our progress.

At Circadia, we value our customer partnerships. We do our part by providing products and education, so that you can do your part for the most important person we serve--your client.

With appreciation,

A handwritten signature in black ink, appearing to read "Michael Q. Pugliese".

Michael Q. Pugliese, LE  
CEO and President

A handwritten signature in black ink, appearing to read "Peter T. Pugliese, M.D.". The signature is written in a cursive style.

Peter T. Pugliese, MD  
Founder

# The Science of Circadian Rhythms

The Circadia name derives from the two Latin words **circa dies**, meaning “around the day.” The word “circadian” refers to a 24 hour cycle and describes rhythmic changes in our physiology and in our behavior. When these biological rhythms are disrupted or become disordered, it can have adverse effects on our health, appearance, and well-being.

Circadian rhythms developed over millions of years, controlled by the daily light-dark cycle created by the earth turning on its axis. Research studies have found that a biological “clock” is located in several parts of the brain, which established these circadian rhythms in mammals. It has been determined that these “clocks” consist of an array of genes which regulate physiological processes throughout the body. We know that the central circadian clock is located in the suprachiasmatic nucleus of the hypothalamus in the brain. Its main function is to synchronize the clocks in the peripheral tissues, the skin being one of these, and it appears that all types of skin cells contain some form of a circadian clock.

It is important to understand that the daily rhythms are not just a response to changes in light and dark produced by the earth's spinning motion, but rather are a response to the timekeeping system within the body. It is this system which allows the organism to adjust and anticipate changes that are associated with day and night. **Why is this so important?** Consider the fact that if the urge to sleep would come during the light portion of the day, many animals would be vulnerable to predators. Anyone who's ever traveled across several continents is familiar with the phenomena of jet lag, which is a profound disruption of the biological clock. The extreme importance of these phenomena has led to the development of a new science associated with the effects of time on the body. This new science is called **chronobiology**. At Circadia, we focus on the effects of chronobiology and circadian rhythms, on the skin.

## Circadian Rhythm and The Skin

The concept of circadian rhythm isn't new. It actually started in the 1700s with the French scientist de Mairan, who published a paper describing the movement of leaves in plants during the day. They would rise during the day and fall at night. He put these plants in a room when they were not exposed to sunlight and he saw the same phenomenon. He concluded that this movement had something to do with a mechanism inside the plant, in addition to whatever effect the sun may have.

A recent study reveals the importance of the biological clock in the regeneration of skin stem cells. When this system is disrupted it results in premature tissue aging, as well as a greater predisposition to developing skin tumors.

Since the skin is exposed to the ultraviolet rays of the sun, as well as bacteria and viruses, one of the main functions of skin is to protect the individual from these potential dangers. When the biological clock is working well, stem cells, which are constantly replacing damaged tissue, can divide at a time which would allow minimum exposure to damaging ultraviolet light.

When skin cells divide, in a process called proliferation, their DNA is more susceptible to ultraviolet damage, since it is extended within the process of cell division. It is well known that the proliferation process takes place during the day at various times, however it happens at least 30 times more rapidly at night than during the day. Associated with proliferation are such key functions as rate of water loss and blood flow, which are 20 to 30 percent higher at night than in the morning or afternoon. Circadian rhythms in the skin affect the biology of appearance and also have a profound effect on the absorption of applied treatment products.

Regulation of the skin barrier properties, such as transepidermal water loss and skin hydration, as well as skin pH and skin temperature, are under control of the circadian clocks. The estheticians should be aware of the time of the day when they make an assessment of the skin or prescribes a specific treatment. The time that the assessment is made and the time that the treatment is applied will have a significant effect on the efficacy of the product, or the correctness of the diagnosis.

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### References

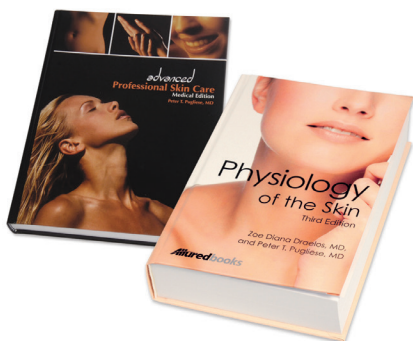
Peggy Janich, Gloria Pascual, Anna Merlos-Suárez, Eduard Batlle, Jürgen Ripperger, Urs Albrecht, Karl Obrietan, Luciano Di Croce, Salvador Aznar Benitah. **The circadian molecular clock creates epidermal stem cell heterogeneity.** Nature, 2011; DOI: 10.1038/nature10649

Geyfman M, Andersen B. **How the skin can tell time.** J Invest Dermatol. 2009 May;129(5):1063-6.

Yosipovitch, G, Xiong, GL, Haus, E, Sackett-Lundeen, L, Ashkenazi, I, Maibach, HI, **Time dependent variations of the skin barrier function in humans: transepidermal water loss, stratum corneum hydration, skin surface pH, and skin temperature.** J Invest Dermatol, 1998 110, 20-23,

# Education

Dr. Pugliese was the first practicing physician to bring the science of skin to the esthetician with his ground-breaking textbook, **Advanced Professional Skin Care**, published in 1990. Dr. Pugliese provided skin care specialists with new illustrations, accurate medical terminology and introduced the fundamentals of cosmetic chemistry. The popularity of Dr. Pugliese's scientific articles made him the most sought-after speaker in the skin care industry. As the new millennium began, new discoveries in skin science and the use of active raw materials led Dr. Pugliese to rewrite and re-illustrate his original textbook, and **Advanced Professional Skin Care, Medical Edition** was published in 2006.



**Physiology of the Skin** is a compilation of Dr. Pugliese's articles published in SKIN INC magazine, which has expanded over 20 years into three editions. The series has been used by educators, practitioners and manufacturers as the most informative topical reference book in the world.

Circadia's continued commitment to education is demonstrated through scientific seminars, manufacturer's classes and frequent editorial contributions in trade publications. Michael Q. Pugliese, BS, LE, and his grandfather, Dr. Pugliese, often appear together on the podium lecturing on skin physiology and ingredient science. Their original presentations are usually standing-room-only and often attended by the most recognizable names in the industry.

Circadia periodically hosts intensive education events at their facility in the picturesque landscape of rural Pennsylvania. Limited to sixteen attendees, the four-day Cosmetic Chemistry Course provides a high level of insight into how ingredients work and how products are made. Attendees use laboratory equipment, tour the Circadia manufacturing facility, and formulate their own customized treatment product to take home.



“The name Circadia brings a smile to my face. I've been in skin care for over 30 years and have never encountered a company as well rounded and gratifying as this. Circadia brings the best education and the finest service not to mention the most amazing result oriented treatments and products to our world of esthetics. Kudos to the Pugliese family. My business would not be the success that it is without you.”

**Linda Rae - Linda Rae Skin Care, Fort Lauderdale, FL**



# Why Use Circadia

We understand that the skin care practitioner has many options for selecting product lines in a highly competitive market place. The clientele we serve changes as they age, in an increasingly stressful environment. Meeting the needs of both practitioners and clients is the basis for all new product development at Circadia. The experience and history which created Circadia by Dr. Pugliese extends far beyond putting our name on the packaging.



It takes many disciplines to create a professional skin care line. We believe it must begin with an accurate knowledge of the structure and function of the skin, to evaluate skin conditions and identify the source of many problems. The next step is the creation of products which positively influence the skin's appearance.

Circadia leads the industry in the utilization of targeted ingredient technologies, a result of our long-standing relationships with raw material suppliers. Dr. Pugliese was recognized for his scientific contributions to the global skin care industry by the Society of Cosmetic Chemists with the prestigious **Maison de Navarre Award** in 1996. After decades of scientific articles and presentations at major events, the esthetics industry recognized Dr. Pugliese in 2011 with a full length feature in Dermascope Magazine's **LEGENDS** series. Les Nouvelles Esthetique magazine awarded Dr. Pugliese the coveted **Crystal Award** in 2012.

The protection of our proprietary formulations is ensured through in-house product development and manufacturing. Third-party quality control monitoring is contracted for assurance of the stability and safety of every Circadia product.

Esthetics is a hands-on practice, and a positive result for the client requires the integration of in-clinic treatments with the appropriate home care support products. Together, we help you to educate your client in the initial interview, and in presenting treatment options and effective retail products.

Our customer service is responsive to your needs. We help you select the Circadia products specific to your clientele and provide in-house training for your staff.

“

We have really benefitted from incorporating Circadia treatments into our practice. We have been using the Circadia Oxygen treatment for our acne and rosacea patients. Their skin has more clarity and less inflammation, and patients are very happy with the results. The diversity of the Circadia line and results from home care regimens have really made a difference for our patients.

Monica Dupen - Director / Owner, Spa Bella Medispa, Denver, CO





### Vitamin Veil Cleanser

A unique soybean-oil based, non-foaming cleanser that gently removes make-up, dirt and impurities while leaving behind an invisible "veil" of antioxidants.

CLEANSE



### Lipid Replacing Cleanser

This revitalizing cleanser effectively removes dirt, make-up and lipids without damaging the skin barrier or denaturing keratin. For best results this product is recommended for normal or slightly oily skin.

CLEANSE

### Micro-Exfoliating Honey Cleanser

Patented micro-beads of natural beeswax gently cleanse and exfoliate while absorbing excess oil. Recommended for all skin types.

CLEANSE



### Amandola Milk Cleanser

Milk protein, vitamins and natural plant essences come together to mildly exfoliate and gradually brighten skin while removing dirt and debris.

CLEANSE



### Cleansing Gel with Salicylic Acid

This cleansing gel lathers into a light, creamy foam that deep cleanses, while beta-hydroxy salicylic acid helps to soften and exfoliate.

CLEANSE



### Vitamin C Reversal Serum

This age-defying essential product contains the most stable and active form of Vitamin C to increase the firm look of skin and neutralize free radicals. Also contains hyaluronic acid and Vitamin B5 to hydrate and smooth.

PROTECT



### Light Day Sunscreen Broad Spectrum SPF-37

This lotion is designed to provide optimal UV and environmental protection. Packed with antioxidants, humectants and soothing ingredients to moisturize and prevent irritation.

PROTECT



### Nighttime Repair

This multi-potent, anti-oxidant lotion with an ultra-stable form of Vitamin C and an anti-aging chrono-peptide, helps awaken dull, tired skin by optimizing circadian rhythms.

REPAIR

### Nighttime Repair Plus

This powerhouse formulation addresses the increased demands of more mature or damaged skin, with higher levels of Vitamin A, anti-oxidants and peptides.

REPAIR



### Vitamin A Boosting Cream

A rich, fast-absorbing cream that targets the more advanced signs of aging with 1% retinyl acetate and humectants that boost skin's youth factor.

REPAIR



### Vitamin A Gel

This intensive spot treatment contains a 1% retinol that helps improve the appearance of aging skin while reducing pigmentation from UV damage.

REPAIR



### MeriStem Serum

A preparation of apple stem cell extract and Edelweiss meristem culture helps skin cells maintain their integrity and build new tissues, making it a super line and wrinkle fighter.

REPAIR



### Phito-Pep 1.6

Made with a highly stable Vitamin C ester and peptides. This formula helps clients in their 20s and early 30s maintain their peak skin condition, barrier function and moisture levels for aging resilience.

REPAIR



### Cyto-Comm

A blend of collagen-boosting and detoxifying ingredients, including a special formulation of amino acids, work to reduce the appearance of sagging and wrinkles.

REPAIR

### Revita-Cyte Complex

A Vitamin A alternative, packed with antioxidants, peptides and botanicals, this anti-aging complex stimulates skin cell regeneration to smooth and strengthen skin showing advanced signs of aging.

REPAIR



### Counter A.G.E.

Counteracts skin glycation (the linking of a sugar molecule to a protein) to prevent collagen loss. Plant extracts (such as resveratrol-packed Mexican bamboo), peptides and ultra-hydrating hyaluronic acid come together to fight glycation in this light, water-based serum.

REPAIR



### Glyco-Guard

Specially engineered biomolecules, including an extract of the amazing Sweet Osmanthus (Fragrant Olive) provide outstanding anti-oxidant and anti-glycation activities to protect from free radical assault.

REPAIR



### Myo-Cyte Plus

This anti-wrinkle serum contains Matrixyl®, Matrixyl® 3000, Snap 8 and Inylene™, to greatly improve the look of expression lines.

REPAIR





### Full Circle Eye Repair

An innovative two-product combination using peptide technology and vitamins coupled with smoothing agents make this system unlike any other. Day Formula effectively works to reduce the look of dark circles and expression lines while protecting the skin. Night Formula amplifies the natural repair cycle while helping prevent the formation of new lines and reducing puffiness.

REPAIR



### Emergency Eye Lift

This crystal-clear gel instantly tightens and lifts the eye area, and plumps fine lines, while offering the long-term benefit of a more youthful look over time.

REPAIR

### Blueberry & White Tea Hydrating Mist

Hydrating botanical mist that nourishes while helping to protect skin with a complex of potent antioxidants.



HYDRATE

### Hydralox

Formulated to 'lock in' critical moisture, reducing trans-epidermal water loss, while creating a supple sheen. This serum can also be added to other Circadia products to boost performance.



HYDRATE



### Moisture on Demand

A new concept in "smart" products, this lightweight serum provides additional hydration as needed while adjusting to climatic conditions.

HYDRATE



### AquaPorin Hydrating Cream

Increases moisture content and protects skin from trans-epidermal water loss. Avocado, olive and macadamia nut oils rehydrate dry, flaky skin and soothe irritation, while Vitamin E helps shield skin from free radicals.

HYDRATE



### Aloe & Calendula Calming Mist

Calms discomfort associated with rosacea and irritated skin. A soothing blend of aloe, calendula, elderflower, rose and seawhip extracts moisturizes skin and reduces signs of redness all in a convenient spray.

SENSITIVE



### Chrono-Calm

Improves the appearance of redness and dilated capillaries. Lightweight and hydrating, this serum is packed with redness-neutralizing peptides and botanicals to activate the skin's natural repair system and protect it against irritating agents.

SENSITIVE

### Tranquili-Cream

Decreases itching associated with red, irritated skin and rosacea. Plant and sea whip extracts work to decrease redness and itching while peptides and a nourishing lipid complex help restore skin's barrier integrity.

SENSITIVE



### Rose-Ease Relief Cream

Soothing botanicals and other ingredients help reduce irritation, strengthen barrier function and helps control demodex mite population, which is thought to contribute to rosacea.

SENSITIVE



### Post Peel Balm

Soothes post-peel skin. This fast-absorbing balm contains allantoin, royal jelly and healing salts to give instant relief following peels, microdermabrasion and waxing.

SENSITIVE



### White Willow & Juniper Clearing Mist

A refreshing mist of white willow, juniper, red clover, and meadowsweet extracts, works to help reduce the appearance of oily skin and blemishes.

ACNE



### Daytime Control

Controls sebum production and prevents breakouts. A patented antimicrobial peptide reinforces skin's natural defense mechanism to help control sebum production while botanicals like Canadian Willowherb extract reduce inflammation.

BPO Free

ACNE



### Nighttime Control

Our nighttime lotion contains a special form of benzoyl peroxide with a smaller particle size that allows it to penetrate pores, attacking the bacteria, *P. acnes*, a known contributor to the development of acne lesions. The benzoyl peroxide used is less irritating to skin than traditional forms of BPO.

ACNE

### Spot Stop

A spot treatment to target acute breakouts. Spot Stop is designed to soothe, cool and reduce the signs of inflammation. Plant extracts, camphor and menthol offer immediate relief.



ACNE

### Licorice & Bearberry Brightening Mist

Plant-based brightening ingredients (including licorice, bearberry and mulberry extracts) help fade dark spots and inhibit tyrosinase and melanin production in this hydrating formula.



BRIGHTEN



### Bright White Serum

This hydroquinone-free serum uses Vitamin C and plant extracts to gently brighten skin and fade hyperpigmentation, including sun spots and post-pregnancy melasma.

BRIGHTEN



### White Veil Brightener

A technologically advanced blend of ingredients effectively brightens unevenly-pigmented skin. Results are improved with the use of Vitamin C Reversal Serum.

BRIGHTEN



### Professional Firming and Shaping Gel

A light fast-absorbing gel noticeably smoothes and tightens targeted areas improving the appearance of skin texture and cellulite.

BODY



### Blue Bamboo Exfoliator for Body

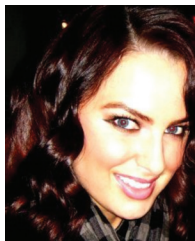
This gorgeous-smelling, sulfate-free scrub with blueberry seeds and bamboo exfoliating particles lathers into a creamy foam to exfoliate, remove impurities and cleanse.

BODY

### Tidal Moisture for Body

Loaded with super-moisturizing agents like panthenol, hibiscus extract and sesame oil, this luxurious body lotion softens skin and protects against trans-epidermal water loss.

BODY



There are many products from Circadia that I love but my absolute favorite is the Myo Cyte Plus. The tightening and firming effects from this little miracle in a bottle is incredible! It has four of the strongest peptides available to reduce wrinkling and it works great under makeup. This is the best anti aging serum I have ever used!

Jess Moss - Currie Hair Skin and Nails, Philadelphia, PA



# SWiCH™ Dermal Rejuvenation System



Circadia's signature treatment, SWiCH™ Dermal Rejuvenation System, helped pioneer transitions from traditional chemical and manual exfoliation techniques to less invasive alternatives. This exclusive system was developed by Dr. Pugliese to restore skin's optimal appearance without the injury or downtime of established peel techniques.

The main premise of chemical peels is to initiate a controlled damage of the skin, in order to incite the body's own mechanisms of repair. Conversely, SWiCH™ utilizes biological metabolites which naturally function within nearly every cell of the body to stimulate energy production.

Between the ages of 35 and 40, a decrease in energy production can be seen in virtually all systems of the body, particularly in the skin. This diminished bioenergetic capacity can be safely boosted with SWiCH™, increasing the production of the cell's energy source. Candidates for SWiCH™ are mature clients, who show visible signs of aging—fine lines, lax skin, irregular pigmentation and a dull appearance. The SWiCH™ Dermal Rejuvenation System may be used on all Fitzpatrick skin types.

When performed on a regular schedule with supporting home care products, SWiCH™ reduces fine lines, diminishes hyperpigmentation and improves skin texture and tone. SWiCH™ exhibits a positive influence on dermal matrix proteins, including collagen and elastin. This non- seasonal treatment is performed every four weeks to maximize mitochondrial energy production (ATP) within the Krebs cycle, and safely incites epidermal cell turnover by initiating stem cell activity in the basal layer.



See how you can make a difference in your clients' skin. It's easy to SWiCH™.

“One of my favorite treatments is SWiCH™ for people over 40 years of age. Although I was a skeptic to give SWiCH™ to myself, due to my sensitive skin, I gave it a try with fabulous results. Honestly, I believe my skin is healthier than it has been in years!

Cynthia K. Jones - T.L.C. Esthetics, Dallas, TX



# Oxygen Rx Treatment

The use of oxygen is among the most controversial modalities in skin care. It is important to differentiate between the activities of oxygen entering the body through the lungs, versus the benefit of a topical application.

Oxygen, taken in through respiration, is used in the complex process of energy production in the cell. It is also critical for the formation of collagen in the dermis. The very nature of the skin as a barrier makes the topical application of oxygen both difficult and only marginally effective. But Dr. Pugliese discovered that oxygen can effectively be generated on the surface of the skin. By generating oxygen on the skin at the time of use, penetration is enhanced without excess formation of free radicals.

The Oxygen Rx kit employs a gel base mixed with a single-use powder to effectively reduce signs of redness and bacterial content. When combined with appropriate home care products, clients with acne and rosacea see and feel significant improvement. This refreshing treatment is also useful in long-term hyperpigmentation treatment protocols.



Breathe. Skin care just got a whole lot easier.



“The Oxygen Rx treatment, by Circadia, is an absolutely fabulous treatment for many skin types. I've had great success with it for about 7 years now. The complexion looks as if it just got a breath of fresh air!”

**Colleen Cunningham - Owner/Esthetician  
Skin Deep Beauty Therapy, San Diego, CA**

# Enzymes and Masks



## Cocoa Enzyme

Your clients will love this magnificently aromatic treatment. It is effective for all skin types but most beneficial for those suffering with acne or rosacea. It works beautifully as a stand-alone treatment or can be used for pre-extraction and in combination with the Oxygen Rx treatment. Immerse your clients in the calming benefits of cocoa.

## Raspberry Enzyme

This enzyme blend is enhanced with raspberry seed extract, shown to effectively reduce the appearance of hyperpigmentation. The raspberry enzyme is often incorporated into a monthly protocol for clients receiving regular SWiCH™ treatments.

## Zymase Enzyme

This treatment is great for exfoliating thicker, highly keratinized skin. The fragrant citrus blend offers clients the benefit of Vitamin C as well as an effective peel alternative.

## Firming Peptide Mask

This firming and tightening mask combines the latest technology in peptide, antioxidant and dermal regeneration science, resulting in increased micro-circulation, detoxification and instant firming, lifting and tightening.

## Red Tea Mask

Circadia's Red Tea Mask is very hydrating and nourishing and is recommended for aging and dehydrated skin types. It is also great for a mini facial just one week after SWiCH™ treatments. It is also rich in antioxidants, purifying, nourishing and soothing.



## Green Tea Mask

This clay based mask is designed to draw out impurities, remove keratin buildup and detoxify the skin while providing anti-inflammatory & antioxidant support.



## Snow Algae & Spirulina Cooling Mask

The unique combination of exotic Snow Algae and nutrient rich spirulina delivers improvement in cellular defenses, cell detoxification and reduces inflammation. Partnered with a unique cooling and soothing technology, this mask is beneficial for all skin types.



## Australian Super-Berry Antioxidant Mask

This luxury mask combines exotic berry extracts sourced from the Australian outback with Lactic and Mandelic Acid to deliver the best in brightening and antioxidant protection. It is designed to nourish, hydrate and brighten the skin for a healthy radiant glow.



## Caviar Lime & Passionfruit Enzyme Mask

This unique enzyme mask delivers advanced enzyme technology utilizing Lime Pearl Caviar to gently rejuvenate the skin. This complex formulation delivers gentle exfoliation with a burst of antioxidant support.



## Marshmallow Whip Hydrating Mask

This mask delivers a complex blend of hydrating ingredients to infuse critical hydration into the skin while delivering healing and soothing botanicals to improve the overall health of the skin.



# pK Peels

Accelerated exfoliation, commonly called peeling, is a mainstay of esthetic practice. Over the years peels have been marketed in many modalities, including chemical, mechanical and thermal treatments. The immediate benefit of a light peel is a general brightening of the skin's appearance through the removal of surface proteins (stratum corneum).

The strength of peels has historically been determined by the pH and percentage of the acids. In 2006, Circadia introduced the pK Peel Series. Seven popular peels included in one kit provide a range of treatments from the very light lactic acid, to the popular salicylic acid, to the more aggressive Jessner's. Our signature MandeliClear with Vitamin A Accelerator is part of an effective regimen for hyperpigmentation.



## Lactic Acid

Circadia's lactic acid peels are gentle, safe and well tolerated by most skin types. Lactic acid is not only effective for lessening the appearance of hyperpigmentation but is also considered hydrating. There is no downtime and clients should expect little or no physical peeling. This peel is offered in 30%, 35% and 45% concentration.

## DermaFrost

The DermaFrost is offered in two strengths: 12.5% and 25% salicylic acid. It is effective for helping to address acne and is considered self neutralizing. Clients can expect a mild to moderate amount of physical peeling. Great for beginner estheticians looking to get more experience with peels.

## Alpha/Beta

The Alpha/Beta peels are a combination of lactic acid and salicylic acid, giving the esthetician the benefits of both acids in one peel. These peels are gentle and very well tolerated and at the same time extremely effective. They will leave the skin soft, more even toned and luminous. These peels may be purchased in two different strengths 30% Lactic Acid / 10% Salicylic Acid and 40% Lactic Acid / 15% Salicylic Acid.

## MandeliClear

The MandeliClear peel system was developed specifically for attenuating pigmentation issues associated with darker Fitzpatrick skin types. A "half Jessner" with added benefits of mandelic acid makes this peel effective for brightening pigmentation associated with acne, melasma or photo damaged skin.

## Jessner

Circadia's Jessner peel is a true Jessner peel. It has an effective blend of salicylic, lactic acids and resorcinol, each with a concentration of 14%. This is a versatile treatment, great for dealing with multiple skin conditions. The client should expect significant peeling, with moderate downtime.





# Peptides

## PROTECT

**Preventhilia™** (Diaminopropionoyl Tripeptide-33) - Tetrapeptide that prevents the damage caused directly or indirectly by UV radiation to DNA and proteins, thus preventing photo-aging

## AGING/REPAIR

**Matrixyl™** (Palmitoyl Pentapeptide-4) - Helps stimulate collagen synthesis and elastin. The action is very similar to retinol without the irritation.

**Matrixyl™ 3000** (Palmitoyl Oligopeptide and Palmitoyl Tetrapeptide-7) - Helps repair damaged tissues

**Matrixyl™ Synthe 6** (Palmitoyl Tripeptide-38) - Evens out skin, relieves and smoothes wrinkles by stimulating constituents of skin matrix and dermal-epidermal junction (i.e. collagen I, II, IV, fibronectin, hyaluronic acid, and laminin 5)

**Eyeliss™** (Hesperidin Methyl Chalcone and Dipeptide-2 and Palmitoyl Tetrapeptide-7) - Hesperidin methyl chalcone is a bioflavonoid that helps to decrease capillary permeability thus reducing fluid deposition and puffiness. Dipeptide Valyl-Tryptophane improves lymphatic circulation to promote drainage of under-eye fluid. Lipopeptide Pal-GQPR improves firmness and elasticity

**Haloxyl®** (Palmitoyl Oligopeptide and Palmitoyl Tetrapeptide-7) - Two peptides work in conjunction to improve firmness and tone of the eye area. Chrysin and N-hydroxysuccinimide stimulate the clearance of deposited blood pigments and solubilize iron for elimination respectively, resulting in the reduction of dark circles

**Argireline®** (Acetyl Hexapeptide-8) - A peptide alternative to botox that attenuates muscle contraction preventing the formation of fine lines and wrinkles

**Snap 8** (Acetyl Octapeptide-3) - Reduces depth of wrinkles caused by contraction of muscles of facial expression

**Inyline®** (Acetyl Hexapeptide-30) - Reduces depth of wrinkles caused by contraction of muscles of facial expression

**dGlyage®** (Tripeptide 9) - Reduces DNA damage resulting from fenton reaction products and reduces metal-mediated A.G.E. formation

**Vilastene™** (Tripeptide-10) - Inhibits mallard reaction and reduces A.G.E.s

**Progeline™** (Trifluoroacetyl Tripeptide-2) - Reduces progerin synthesis, MMP and elastase inhibitor, increases syndecan, contracts collagen to reduce signs of aging including sagging and wrinkles

**Thymulen® 4** (Acetyl Tetrapeptide-2) - Biomimetic of thymopoietin; boosts skin regeneration and reinforces cutaneous immune defenses

**Chronocyclin®** (Glutamylamidoethyl Imidazole) - Anti-aging, enhances expression of circadian genes, optimizes cell defenses and renewal activities, and Vitamin D transformation

**L-Carnosine** - Di-peptide that has anti-glycation properties

**Ronacare® Cyclopeptide-5** - A novel cyclopeptide binds integrins and increases signaling for extracellular matrix production and crosstalk between skin cells. This results in increased tensile and compressive strength, elasticity, and firmness for the skin. Additionally, wrinkles are reduced and the skin is smoothed and crosstalk between skin cells. This results in increased tensile and compressive strength, elasticity, and firmness for the skin. Additionally, wrinkles are reduced and the skin is smoothed

## HYDRATING

**Diffuporine™** (Acetyl Hexapeptide-37) - Boosts Aquaporin-3 which promotes inner hydration mechanisms and water movement from the basal layer of epidermis and to the stratum corneum, rejuvenating the skin by improving barrier function, collagen I synthesis and cellular proliferation

## SENSITIVE

**Telangyn™** (Acetyl Tripeptide-33) - Decreases facial redness and other skin disorders caused by the release of interleukins, reducing redness, dilated blood vessels, tissue degradation and post-inflammatory

**Delisens™** (Acetyl Hexapeptide-46) - Down regulates PAR-2 thus reducing discomfort of pain and itching occurring in sensitive skin and restoring damaged barrier integrity, also increasing hydration, improves scaling, smoothing and softness in very dry skin

**Thermostressine™** (Acetyl Tetrapeptide-22) - Helps fight cellular stress and increases HSP70 levels to prevent further stress

## BRIGHTENING

**Melanostatin® 5** (Nonapeptide-1) - Skin whitening peptide antagonist alpha-melanocyte stimulating hormone ( $\alpha$ -MSH) blocking tyrosinase activation

**B-White™** (Oligopeptide-68) - Reduces MITF (microphthalmia-associated transcription factor) to decrease constitutive and facultative pigmentation pathways. Decreases tyrosinase activity and melanin synthesis to reduce overall skin pigmentation

## ACNE

**Bodyfensine®** (Acetyl Dipeptide-3) - Human  $\beta$ -defensin-2 and -3 mimetics that reinforce skin's natural immunity and lower risk of possible infections from external agents

**GranActive™ Acne** (Oligopeptide -10) - a patented anti-microbial peptide from plant amino acid that promotes healthy skin tone

## BODY

**Liporeductyl®** (Tripeptide-1) - Activates lipolysis and microcirculation

**Silusyne™** (Acetyl Hexapeptide-39) - Reduces adipogenesis (new fat) by decreasing PGC-1 $\alpha$  activity



# Vitamins

## Vitamin A

**Retinyl Acetate** - A family of vitamins ultimately converted to Retinoic acid in the skin. They act as free radical scavengers, protect against UV damage, and assist in DNA repair following UV exposure. They also recruit moisture to the skin and promote collagen production. Retinoic acid may also play a role in keratinocyte differentiation and proliferation.

**Retinol** - Most effective substance for the care of aging and UV-damaged skin. Increases enzyme activity, and normalizes keratinisation, which improves and normalizes the cell renewal process. Reduces wrinkles and lines in number, area, length and width.

## Vitamin B

**Panthenol** - Regenerative, soothing

**Niacinamide** - anti-inflammatory actions that may be of benefit to patients with inflammatory skin conditions

## Vitamin C

**Magnesium Ascorbyl Phosphate** - A biologically active form of Vitamin C that inhibits the breakdown of collagen

**Tetrahexyldecyl Ascorbate** - Oil-soluble Vitamin C ester that is highly stable and reduces melanin synthesis

**Aminopropyl Ascorbyl Phosphate** - Stabilized form of Vitamin C which has lightening properties due to the inhibition of tyrosinase. This active also has regenerative and antioxidant activity.

**Ascorbyl Glucoside** - A stabilized form of Vitamin C that releases Vitamin C at the cell surface to reduce melanin synthesis, lighten existing melanin, act as an antioxidant, and promote collagen synthesis. These repair and lightening mechanisms help maintain brighter younger-looking skin.

## Vitamin E

**Tocopherol** - A very powerful fat-soluble antioxidant that protects cellular membranes from free radicals

**Tocopheryl Acetate** - A very powerful fat-soluble antioxidant that protects cellular membranes from free radicals

**Tocotrienol** - Found in very high concentrations in rice bran oil and palm oil, shown to have potent anti-glycation effect



# Stem Cells

**Grape Stem Cell Extract** (PhytoCell Tech Solar Vitis) - Protects against oxidative and UV damage, shown to delay cell senescence

**Edelweiss Stem Cell Extract** (Leontopodium Alpinum) - Preparation of Leontopodium Alpinum meristem culture that provides antioxidant activity, anti-hyaluronidase activity, and anti-collagenase activity. Thus it is shown to reduce wrinkle depth by 15% around the eye after only 20 days of treatment

**Apple Stem Cell Extract** (Malus Domestica) - Liposomal preparation from stem cells of a rare Swiss apple known for its longevity. Increases vitality, delays senescence, and combats chronological aging in skin cell. The extract has been shown to help skin stem cells maintain their characteristics and their capacity to build new tissues. It also has been shown to delay aging and have an anti-wrinkle effect

**Lilac Stem Cell Extract** (Malodextrin and Syringa Vulgaris) - Rich in verbascoside with strong anti-inflammatory activity and effectiveness against p. Acnes

**Gardenia stem cell extract** (Gardenia Jasminoides) - Rich in moisturizing phytosterols and polysaccharides, along with antioxidative phenylpropanoids (e.g. feruloyl-6-glucoside), protects the skin's extra-cellular matrix from degradation by MMPs and stimulates collagen production

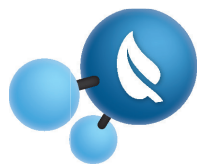
**Marrubium Stem Cell Extract** (Marrubium vulgaremeristem) - Rich in phenylpropanoids (i.e. forsythoside B and verbascoside) which are defensive molecules that protect the skin against oxidants and activate the skin's self-defense systems.



Edelweiss



Grape Stem Cell Extract



# Botanicals



Butchersbroom

**Aloe Vera** (*Aloe barbadensis*) - Rich in mucilaginous polysaccharides including acemannan (one of the active metabolites of Aloe); wound healing, stimulates fibroblast growth, angiogenesis, and re-epithelialization; reduces inflammation and increases collagen synthesis

**Angico** (*Piptadenia colubrina*) - Increases Aquaporins-3, 9, and 10 to hydrate skin, increases fibronectin, and envelope proteins to improve corneocyte cohesion

**Blue Malva Flower** (*Malva sylvestris*) - Contains a complex polysaccharide with excellent hydration abilities

**Blueberry** (*Vaccinium*) - Contains anthocyanins, strong antioxidant

**Butchersbroom** (*Ruscus Aculeatus*) - Contains Ruscogenins which reduce the appearance and circulation of veins by promoting muscle contractions surrounding the veins.

**Calendula** (*Calendula officinalis*) - Contains Lutein, zeaxanthin, flavonoids, glycosides of oleanic acid and, phenolic acid. It has emollient, wound-healing, soothing, antiseptic, anti-itching, and anti-inflammatory properties.

**Cranberry Seed Oil** (*Vaccinium Macrocarpon*) - Rich in tocotrienols and tocopherols, and antioxidants, Omega 3, 6, and 9 EFA, vitamin A

**Green Tea** (*Camellia Sinensis*) - Contains free radical scavengers that protect against damage and reduce redness in the skin

**Hibiscus** (*Hibiscus Sabdariffa*) - Contains flavonoids and polyphenolic compounds that act as excellent antioxidants. Rich in polysaccharides that have moisturizing activity. Hibiscus extract has also been shown to have antimicrobial activity and to help maintain skin tone and elasticity

**Horse Chestnut** (*Aesculus hippocastanum*) - Contains aescin which has been shown to have anti-inflammatory effects

**Irish Moss** (*Chondrus Crispus*) - Hyaluronate and sea plant extract improve texture of skin and bind large quantities of water to instantly hydrate and soften dry skin

**Juniper Fruit** (*Juniperus Communis*) - Antiseptic and astringent properties

**Marshmallow** (*Althaea Officinalis*) - Anti-inflammatory and film forming to protect against irritating agents

**Meadowfoam Seed Oil** (*Olus (Vegetable) Oil*) - Emollient, barrier protection, moisturizing

**Palm Oil** (*Elaeis Guineensis*) - Contains high levels of tocotrienol shown to inhibit NF-kB

**Passion Flower** (*Passiflora Incarnata*) - Contains three powerful muscle relaxants that are effective in smoothing wrinkled skin

**Plantago** (*Plantago lanceolata*) - Enhances collagen production, wound healing, and is anti-inflammatory; contains Aucubin, flavonoids, phenylethanoids, tannin and polysaccharides

**Rice Bran Oil** (*Oryza Sativa*) - High in tocotrienols, also possesses a peptide that inhibits MMP (matrix metalloproteinase) activity, enzymes that destroy collagen and elastin

**Rumex** (*Rumex Occidentalis*) - Inhibits tyrosinase, limits tanning, anti-erythema effect, age spot reduction

**Sea Whip** (*Pseudopterogorgia Elisabethae*) - Rich in powerful anti-inflammatory compounds called pseudopterogens which inhibit the arachidonic acid cascade

**Snow Crocus Bulb** (*Crocus Cynanthus*) - Improves epidermal communication to boost collagen and elastin production, stimulate growth factors, and renew resilience and firmness

**Sweet Almond Milk** (*Prunus Amygdalus Dulcis*) - Nourishing and moisturizing

**Thale Cress** (*Arabidopsis thaliana*) - Helps repair DNA damage from oxidants generated by UVA

**Willow Bark** (*Salix Alba*) - A blend of terpinen-4-ol and willow extract enriched with salicylic derivatives providing antimicrobial activity



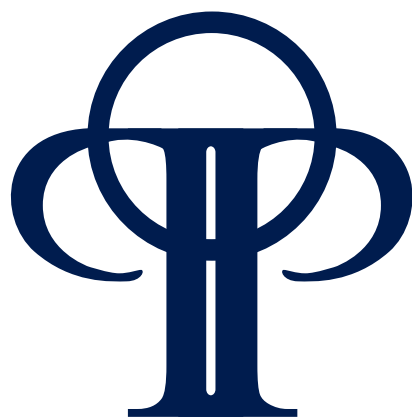
Snow Crocus

For a complete list of botanicals used in Circadia products visit the Ingredient Profile at [Circadia.com](http://Circadia.com).



Horse Chestnut





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through education and innovative product development.

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