

Formulation Booklet BerriQi



SCIENCE PERFECTED IN MARKET



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Executive Summary

To help customers with formulation ideas on which health claims can potentially be made, Anagenix has researched various ingredients which may be used in combination with BerriQi® for respiratory health, cold and flu treatment, skin health, and sports performance.

The ingredients investigated (see table below) have approved health claims relating to respiratory health in some markets, mainly the EU and US.

Ingredient	Available Claims	Countries	Key Medical Benefits
Vitamin C	- Contributes to normal immune system function - Reduces tiredness and fatigue - Protects DNA, proteins and lipids from oxidative damage - Aids iron absorption	EU, USA, NZ	- Powerful antioxidant - Essential for collagen synthesis - Boosts immune system - Aids in iron absorption
Zinc	- Supports immune function - Helps heal wounds - Reduces duration of colds - Aids fertility	EU, USA, NZ	- Essential for immune function - Supports wound healing - May reduce duration of respiratory infections - Supports growth and development
Elderberry extract	- Reduces cold duration and symptoms	Canada, EU, USA	- Antiviral effects - May shorten flu symptoms - Antioxidant and anti-inflammatory benefits
N-Acetyl Cysteine	- Antidote for acetaminophen overdose - Mucolytic agent for chronic respiratory conditions - Mental health benefits	USA, UK, Australia	- Increases glutathione levels - Helps alleviate symptoms of chronic respiratory diseases - Supports mental health conditions
Quercetin	- Reduce oxidative damage - Support cardiovascular health - Manage symptoms of allergies	EU	- Lowers blood pressure - Reduces cholesterol levels - Anti-inflammatory effects - Antioxidant properties
Boswellia	- Anti-inflammatory benefits	Europe	- Reduces pain in osteoarthritis - Helps with asthma - Treats inflammatory bowel disease
Collagen peptides	- Improves skin elasticity - Supports joint health - Reduces osteoarthritis pain	EU, USA	- Improves skin hydration and elasticity - Helps alleviate joint pain - Supports bone health
Hyaluronic acid	- Improves skin hydration - Reduces signs of aging - Improves joint pain	EU, Canada, USA	- Improves skin hydration and texture - Aids in wound healing - Provides lubrication to joints
Vitamin D3	- Bone health and development	USA, EU, Australia, New Zealand	- Crucial for calcium absorption - Supports bone health - Potential immune-modulating effects
Creatine	- Enhances muscle strength in adults over 55	EU	- Improves muscle mass and strength - Increases exercise performance - Enhances recovery
Beta-alanine	- Increases physical performance during short-duration, high-intensity exercise	EU, USA	- Improves exercise performance - Decreases muscle fatigue - Increases muscle endurance

Respiratory Immunity

Ingredient 1: Vitamin C

Approved Health Claims:

- US: "Supports immune function" (structure/function claim)
- EU: "Vitamin C contributes to the normal function of the immune system"
- AU/NZ: "Vitamin C contributes to normal immune system function"

Rationale:

Vitamin C complements BerriQi's respiratory support by enhancing overall immune function. While BerriQi reduces airway inflammation, vitamin C strengthens the immune response, potentially leading to a more comprehensive defense against respiratory challenges.

Mechanism of Action:

BerriQi reduces airway inflammation and mucus production. Vitamin C supports immune function by enhancing the production and activity of white blood cells, particularly neutrophils and T-lymphocytes. It also acts as a powerful antioxidant, protecting cells from oxidative stress caused by infections or environmental pollutants.

Similar Product:

Airborne Immune Support Supplement.



Clinical Evidence:

Studies show BerriQi reduces inflammatory cell infiltration in airways. Vitamin C supplementation has been shown to improve antioxidant status and reduced lung function decline due to smoking and/or COPD¹.

Suggested Formulation:

BerriQi Respiratory Defence Capsules

Ingredients:

- BerriQi (650mg)
- Vitamin C (250mg)
- Zinc (15mg)
- Elderberry extract (150mg)

Ingredient 2: Zinc

Approved Health Claims:

- US: "Zinc supports immune function" (structure/function claim)
- EU: "Zinc contributes to the normal function of the immune system"
- AU/NZ: "Zinc contributes to normal immune system function"

Rationale:

Zinc complements BerriQi's respiratory benefits by providing additional immune support. While BerriQi focuses on reducing airway inflammation, zinc enhances the overall immune response.

Mechanism of Action:

BerriQi supports respiratory health. Zinc helps control infections by gently tapping the brakes on the immune response, preventing out-of-control inflammation. It interacts with a protein that is vital to the fight against infection, helping balance the immune response.

Similar Product:

Zestt Wellness Exhale



Clinical Evidence:

Research has shown that zinc homes in on the NF-κB pathway and helps shut it down, effectively ensuring that the immune response does not spiral out of control².

Suggested Formulation:

BerriQi Zinc Defence Lozenges

Ingredients:

- BerriQi (650 mg)
- Zinc (10mg)
- Echinacea purpurea extract (400mg)

Other suggested formulations:



Formulation 1. BerriQi Lung Shield Powder

Ingredients:

- BerriQi (750mg)
- Echinacea purpurea extract (400mg)
- Beta-glucans (250mg)
- Vitamin D3 (1000 IU)



Formulation 2. BerriQi Respiratory Boost Liquid

Ingredients:

- BerriQi (1300mg)
- Pelargonium sidoides extract (200mg)
- N-Acetyl Cysteine (300mg)
- Propolis extract (100mg)



Formulation 3. BerriQi Immunity Support Powder

Ingredients:

- BerriQi (650 mg)
- Olive leaf extract - Oleuropein(100mg)
- Vitamin E (25mg)



Cold/Flu

(works in one hour)

Ingredient 1: Elderberry Extract

Approved Health Claims:

- US: “May help reduce the duration and severity of cold and flu symptoms” (structure/function claim)
- EU: No approved claims
- AU/NZ: “May help reduce duration and severity of cold and flu symptoms”

Rationale:

Elderberry extract complements BerriQi’s respiratory benefits with its potential antiviral properties and ability to reduce the severity and duration of cold and flu symptoms.

Mechanism of Action:

BerriQi reduces airway inflammation and helps with removal of collagen deposition lessening cough and other cold related symptoms. Elderberry contains compounds that may inhibit viral entry and replication. It also has immunomodulatory effects, potentially enhancing the body’s immune response.

Similar Product:

BeNourish TigroQi



Clinical Evidence:

A study showed that elderberry extract inhibited the replication of human and animal influenza viruses. Patients treated with elderberry extract showed significant improvement in flu symptoms after 3 days of treatment³.

Suggested Formulation:

BerriQi Quick Response Immune Capsules

Ingredients:

- BerriQi (1300mg)
- Elderberry extract (200mg)
- Vitamin D3 (2000 IU)
- Beta-glucans (250mg)

Ingredient 2: Marshmallow Root

Approved Health Claims:

- US: “May help soothe throat irritation and dry cough” (structure/function claim)
- EU: “Traditional herbal medicinal product used to relieve cough associated with cold”
- AU/NZ: “Traditionally used in Western herbal medicine to relieve coughs”

Rationale:

Marshmallow root complements BerriQi’s respiratory benefits by providing additional soothing effects on irritated mucous membranes. While BerriQi reduces airway inflammation, marshmallow root can help relieve cough symptoms by forming a protective coating on the throat.

Mechanism of Action:

Marshmallow root contains high levels of mucilage, a thick, gluey substance that coats the throat and forms a protective layer over mucous membranes. This coating helps soothe irritation and reduce the urge to cough. Additionally, marshmallow root has anti-inflammatory and antioxidant properties that may contribute to its effectiveness.

Similar Product:

Nature’s Sunshine Marshmallow & Fenugreek

Clinical Evidence:

A study published in Complementary Medicine Research involved 822 consumers using either lozenges or syrup containing aqueous marshmallow root extract (STW42) for dry cough. The results showed good effectiveness in treating oral or pharyngeal irritation and associated dry cough, with a rapid onset of effects, typically within 10 minutes. The tolerability was very good, with only 3 minor adverse events reported for the syrup formulation.

Suggested Formulation:

BerriQi Cough Syrup

Ingredients:

- BerriQi (650 mg)
- Marshmallow Root Extract (300mg)
- Vitamin C (100mg)



Other suggested formulations:



Formulation 1. BerriQi Rapid Relief Effervescent Tablets

Ingredients:

- BerriQi (1300mg)
- Zinc acetate (25mg)
- Andrographis extract (200mg)
- Ginger extract (150mg)



Formulation 2. BerriQi Fast-Acting Immune Nasal Spray

Ingredients:

- BerriQi (650mg)
- Propolis extract (100mg)
- Echinacea extract (150mg)
- Pelargonium sidoides extract (100mg)
- Xylitol (2%)
- Hyaluronic Acid (0.2%)
- Eucalyptus Oil (0.1%)



Formulation 3. BerriQi Instant Relief Throat Lozenges

Ingredients:

- BerriQi (100mg)
- Zinc gluconate (10mg)
- Slippery elm bark extract (50mg)
- Honey (100mg)



Chronic respiratory symptom relief from asthma and pollution

Ingredient 1: N-Acetyl Cysteine (NAC)

Approved Health Claims:

- US: "Supports respiratory health" (structure/function claim)
- EU: No approved claims
- AU/NZ: "Supports respiratory health"

Rationale:

NAC complements BerriQi's anti-inflammatory effects with its mucolytic and antioxidant properties, potentially providing comprehensive support for chronic respiratory symptoms. NAC's potent antioxidant properties would complement BerriQi's antioxidant effects, providing better protection against oxidative stress caused by pollution and inflammatory processes. While BerriQi helps reduce airway inflammation, NAC would provide additional anti-inflammatory effects through different pathways, potentially enhancing overall efficacy. Both BerriQi and NAC have shown the ability to reduce mucus production and viscosity, which could lead to improved symptom relief and airway clearance.

Mechanism of Action:

NAC acts as a precursor to glutathione, a powerful antioxidant. It also has direct mucolytic effects, breaking down disulfide bonds in mucus proteins and improving airway clearance. NAC also inhibits NF-κB activation and reduces the production of pro-inflammatory cytokines and therefore reducing inflammation. NAC may also enhance resistance to respiratory viral infections

Similar Product:

Solgar NAC



Clinical Evidence:

A study showed that N-acetylcysteine reduces the risk of re-hospitalisation for chronic obstructive pulmonary disease by ~30% and that this risk reduction is dose-dependent⁴.

Suggested Formulation:

BerriQi Clear Breath Capsules

Ingredients:

- BerriQi (1300mg)
- Boswellia extract (300mg)
- N-acetyl Cysteine (600mg)
- Quercetin (500mg)
- Vitamin D3 (2000 IU)

Ingredient 2: Peppermint

Approved Health Claims:

- US: "May support respiratory health"
- EU: No approved claims specifically for respiratory health
- AU/NZ: "May help relieve symptoms of mild respiratory discomfort"

Rationale:

While BerriQi helps reduce airway inflammation, peppermint's bronchodilator properties could provide additional relief by relaxing airway muscles. Both ingredients offer anti-inflammatory effects through different pathways, enhancing overall efficacy. Peppermint's ability to clear nasal passages and reduce congestion complement BerriQi's effects on mucus regulation. Peppermint's analgesic effects also provide additional comfort for irritated airways. By combining these two ingredients, the formulation addresses multiple aspects of asthma and pollution-induced respiratory symptoms more effectively than either component alone, providing a more comprehensive approach to respiratory health.

Mechanism of Action:

Peppermint works through multiple complementary mechanisms:

1. Bronchodilation: Menthol relaxes airway smooth muscles, improving airflow.
2. Anti-inflammatory effects: Reduces inflammation in the respiratory tract.
3. Decongestant properties: Helps clear nasal passages and reduce congestion.
4. Analgesic effects: Soothes throat irritation.

Clinical Evidence:

Peppermint, derived from the leaves of the peppermint plant, has demonstrated significant benefits for respiratory health:

1. The active compound in peppermint, menthol, acts as a bronchodilator, helping to relax the muscles around the airways and making it easier to breathe¹¹.
2. Research published in Frontiers in Immunology highlighted that menthol has anti-inflammatory and analgesic effects, which can help reduce throat irritation and inflammation in the respiratory tract¹¹.
3. Peppermint has shown effectiveness in clearing nasal passages, reducing congestion, and improving airflow, which can help reduce symptoms of wheezing or shortness of breath¹¹.

Similar Product:

Harker Herbals Deep Lung Support



Suggested Formulation:

BerriQi Support Powder

Ingredients:

- BerriQi (13000mg)
- Peppermint Extract (100mg)
- Vitamin D (1000 IU)



Other suggested formulations:



Formulation 1. BerriQi Air Shield Powder

Ingredients:

- BerriQi (1300mg)
- Boswellia serrata extract (300mg)
- Spirulina (3g)
- Bromelain (500mg)



Formulation 2. BerriQi Respiratory Comfort Liquid for Asthma

Ingredients:

- BerriQi (1300mg)
- Cordyceps extract (500mg)
- Mullein leaf extract (300mg)
- Thyme extract (200mg)



Formulation 3. BerriQi Chronic Support

Ingredients:

- BerriQi (650mg)
- Omega-3 fatty acids (800mg)
- N-Acetyl Cysteine (300mg)



Skin health

Ingredient 1: Collagen Peptides

Approved Health Claims:

- US: “Supports skin health” (structure/function claim)
- EU: No approved claims
- AU/NZ: No specific approved claims

Rationale:

Collagen peptides complement BerriQi’s antioxidant properties by supporting skin structure and hydration, potentially providing comprehensive support for skin health. BerriQi also helps to lessen skin irritation due to the anthocyanins present that help reduce inflammation.

Mechanism of Action:

Collagen peptides support skin structure and elasticity. They may also stimulate the production of other important proteins in the skin, such as elastin and fibrillin.

Similar Product:

Xtendlife Skin-Support Collagen Supplement

Clinical Evidence:

A study showed that oral intake of collagen peptide for 12 weeks had beneficial effects on skin health, including improved hydration, elasticity, and reduced wrinkles⁵.

Suggested Formulation:

BerriQi Glow Capsules

Ingredients:

- BerriQi (500mg)
- Astaxanthin (4mg)
- Collagen peptides (2.5g)
- Vitamin C (250mg)



Ingredient 2: Hyaluronic Acid

Approved Health Claims:

- US: “Supports skin hydration, helps maintain skin elasticity”
- EU: No specific approved claims for hyaluronic acid
- AU/NZ: No specific approved claims

Rationale:

Combining hyaluronic acid with BerriQi would create a synergistic formulation: While BerriQi helps reduce airway inflammation and mucus production, HA provides additional hydration and skin repair benefits. Both ingredients offer antioxidant effects, potentially providing more comprehensive protection against oxidative stress. BerriQi’s anti-inflammatory properties combined with HA’s hydrating effects could offer a more holistic approach to skin health.

Mechanism of Action:

Hyaluronic acid works through multiple complementary mechanisms:

1. Hydration: HA has a unique capacity to retain water, helping to maintain skin moisture
2. Antioxidant effects: HA helps protect skin cells from oxidative stress
3. Collagen synthesis: HA supports the production of collagen, essential for skin elasticity
4. Cell migration: HA provides a framework for cell movement, crucial for skin repair

Similar Product:

Radiance Ageless Beauty

Clinical Evidence:

A randomized, double-blind clinical trial involving 129 female participants demonstrated that oral administration of hyaluronic acid significantly improved skin hydration after 2-8 weeks in both young and elderly group¹³. The study also showed improvements in skin tone after 4-8 weeks and an increase in epidermal thickness after 12 weeks¹³.

Suggested Formulation:

BerriQi Antioxidant Defense Chewable

Ingredients:

- BerriQi (300mg)
- Hyaluronic Acid Powder (120mg)
- Vitamin E (20mg)



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Other suggested formulations:



Formulation 1.
BerriQi Radiant Skin Powder

Ingredients:

- BerriQi (750mg)
- Hyaluronic acid (200mg)
- Ceramides (50mg)
- Green tea extract (300mg)



Formulation 2.
BerriQi Skin Defence Liquid

Ingredients:

- BerriQi (650mg)
- Coenzyme Q10 (100mg)
- Grape seed extract (200mg)
- Pomegranate extract (300mg)



Formulation 3.
BerriQi Skin Plump Powder

Ingredients:

- BerriQi (300mg)
- Hyaluranoic acid (300mg)
- Vitamin C (250mg)
- Vitamin E (50IU)



Sports Performance

Ingredient 1: Creatine

Approved Health Claims:

- US: “May improve athletic performance” (structure/function claim)
- EU: “Creatine increases physical performance in successive bursts of short-term, high intensity exercise”
- AU/NZ: “Creatine may improve athletic performance”

Rationale:

Creatine complements BerriQi’s respiratory benefits by enhancing power output and muscle performance, potentially leading to improved overall athletic performance.

Mechanism of Action:

Creatine increases the availability of phosphocreatine in muscles, enhancing ATP regeneration during high-intensity, short-duration exercises.

Similar Product:

Optimum Nutrition Gold Standard Pre-Workout



Clinical Evidence:

A meta-analysis showed that creatine supplementation combined with resistance training amplified performance enhancement on maximum and endurance strength as well as muscle hypertrophy⁶.

Suggested Formulation:

BerriQi Power Boost Powder

Ingredients:

- BerriQi (1000mg)
- Creatine monohydrate (5g)
- Beta-alanine (3.2g)
- Tart cherry extract (500mg)

Ingredient 2: Beta-alanine

Approved Health Claims:

- US: “May support muscle endurance” (structure/function claim)
- EU: No approved claims
- AU/NZ: No specific approved claims

Rationale:

Beta-alanine complements BerriQi’s respiratory benefits by potentially improving muscle endurance and buffering capacity. While BerriQi may help athletes breathe better and deeper, beta-alanine can help delay muscle fatigue, allowing athletes to train harder and work out faster for longer periods.

Mechanism of Action:

Beta-alanine is a precursor to carnosine, which acts as a pH buffer in muscles. It helps neutralize the build-up of hydrogen ions during high-intensity exercise, potentially delaying the onset of muscular fatigue. This buffering effect may allow athletes to maintain higher intensities of exercise for longer periods, complementing the improved breathing capacity provided by BerriQi.

Similar Product:

Cellucor C4 Original Pre Workout Powder



Clinical Evidence:

A meta-analysis found that beta-alanine supplementation improved exercise capacity in tasks lasting 60 to 240 second⁷. Another study demonstrated that beta-alanine supplementation can improve high-intensity cycling capacity⁸. These findings suggest that beta-alanine can enhance performance in activities that require sustained high-intensity effort, which aligns well with BerriQi’s potential to improve respiratory function during intense exercise.

Suggested Formulation:

BerriQi Lung Strength for Exercise Sachet

Ingredients:

- BerriQi (300 mg)
- Beta-alanine (1g)
- Branched-chain amino acids (BCAAs) (2g)

Other suggested formulations:



Formulation 1. BerriQi Endurance Plus Capsules

Ingredients:

- BerriQi (750mg)
- Beetroot extract (500mg)
- L-Citrulline (2g)
- Rhodiola rosea extract (200mg)



Formulation 2. BerriQi Recovery Max Sachet

Ingredients:

- BerriQi (1000mg)
- Whey protein isolate (25g)
- L-Glutamine (5g)
- Turmeric extract (500mg)



Formulation 3. BerriQi Pre-Workout

Ingredients:

- BerriQi (650 mg)
- Electrolytes (50mg)
- Creatine (5g)
- Caffeine Anhydrous (50mg)





Children’s Lung Health

Ingredient 1: Honey

Approved Health Claims:

- USA: “Supports respiratory health in children”
- NZ/AUS: “May help relieve symptoms of mild throat irritation”
- European Union: No specific authorized health claims for honey and respiratory health. However, honey can be used as a natural sweetener and flavour enhancer.

Rationale:

While BerriQi helps reduce airway inflammation and mucus production, honey provides additional soothing and antimicrobial effects. Honey’s natural sweetness would improve the taste, making the formulation more appealing to children. Both honey and BerriQi are natural, which aligns with parents’ preferences for children’s health products. The clinical evidence for honey in children’s cough syrup supports its use in respiratory health formulations.

Mechanism of Action:

Honey contains various antioxidants that help protect respiratory tissues from oxidative stress. Honey has natural antibacterial activity, which may help fight respiratory infections. The viscous nature of honey helps coat and soothe irritated throat tissues. Honey stimulates salivation and mucus secretion, which can help lubricate airways and reduce coughing.

Similar Product:

Night-Time Soothing Syrup with UMF 10+ Manuka Honey



Clinical Evidence:

A randomized, double-blind, placebo-controlled clinical trial involving 106 children with acute cough evaluated the efficacy of a pediatric cough syrup containing honey (KalobaTUSS®). The study found that children receiving the honey-based syrup showed:

- Early and significant reduction in night-time and day-time cough scores¹²
- Shorter duration of cough compared to placebo¹²
- Positive effects in reducing cough severity¹²

Suggested Formulation:

BerriQi Kids’ Lung Support Syrup

Ingredients:

- BerriQi (1000mg)
- Honey (500mg)
- Vitamin C (50mg)

Ingredient 2: Quercetin

Approved Health Claims:

- US: “May support respiratory health in children” (structure/function claim)
- EU: No approved claims specifically for children’s respiratory health
- AU/NZ: No specific approved claims for children’s respiratory health

Rationale:

Quercetin would complement BerriQi for children’s lung health by enhancing anti-inflammatory and antioxidant effects, potentially leading to more comprehensive protection against respiratory issues. The combination could provide synergistic benefits in reducing airway inflammation, supporting immune function, and decreasing mucus production. This dual approach may offer a more robust solution for maintaining and improving children’s respiratory health.

Mechanism of Action:

Antioxidant effects: Quercetin neutralizes free radicals and reduces oxidative stress in lung tissues.

Anti-inflammatory properties: It inhibits the release of pro-inflammatory cytokines like TNF- α , IL-6, and IL-1 β .

Mast cell stabilization: Quercetin may reduce the release of histamine and other allergic mediators.

Mucolytic properties: It may help break down mucus in the airways.

Similar Product:

Healing Drops Quercetin with Bromelain Gummies - Vitamin C + Zinc + Vitamin D3



Clinical Evidence:

Several clinical studies have show quercetin supplementation reduced upper respiratory tract infection rates, in addition to a study on mice showing quercetin reduced inflammatory cell infiltration in airways and decreased mucus production^{9,10}.

Suggested Formulation:

BerriQi Kids Lung Health Chewable

Ingredients:

- BerriQi (1000mg)
- Quercetin (125 mg)
- Elderberry Extract (100mg)

Other suggested formulations:



Formulation 1.
BerriQi Kids' Lung Support Syrup

- Ingredients:**
- BerriQi (300mg)
 - Vitamin C (50mg)
 - Honey (2g)
- Dosage: 5-10ml daily, depending on age



Formulation 2.
BerriQi Respiratory Comfort Chewable Tablets

- Ingredients:**
- BerriQi (200mg)
 - Vitamin D3 (400 IU)
 - Zinc (5mg)
- Dosage: 1 chewable tablet daily for children 3 years and older



Formulation 3.
BerriQi Junior Respiratory Health Powder

- Ingredients:**
- BerriQi (500mg)
 - Vitamin C (250mg)
 - Magnesium (50mg)
- Dosage: Mix 1 scoop in water or juice daily for children 4 years and older

Manufacturing Specifications

Manufacturing Aid

Appearance	Free Flowing Powder
Colour	Purple to deep red
Taste/Odour	Delicious! Tastes just like a boysenberry
Abscisic acid	10.5 mg/100g
Powder nature	Mildly hygroscopic
Storage	Store and transport cool and dry
Temperature processing	Suitable for low temperature processing
Particle size	Milled through US 20 mesh
Bulk density poured	0.43 g/ml
Shelf Life	36 months
Format Recommendations	Chewables, Powder, Capsules, Functional Foods
Processing Aid recommendations	Magnesium Stearate, MCC, Aerosil





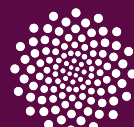
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For more information,
please visit www.berriqi.com



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