



Award  
Winning  
★★★★★

**BrocStar Explains:**

# **Sulforaphane**

**for ATHLETIC PERFORMANCE**

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STAR**  
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# Research studies have specifically linked glucoraphanin & sulforaphane to:

## REDUCED MUSCLE SORENESS & IMPROVED MUSCLE RECOVERY

Sulforaphane activates powerful anti-inflammatory and antioxidant pathways in our cells, which help protect muscles during and following periods of intense exercise. Initial studies have found that taking glucoraphanin prior to exercise can:

- | Reduce the severity of Delayed Onset Muscle Soreness (DOMS);
- | Reduce levels of oxidative stress markers in post-exercise muscle tissue;<sup>1</sup>
- | Reduce the production of pro-inflammatory cytokines following exercise;<sup>2</sup>
- | Reduce damage to muscles from various forms of intense exercise;<sup>2,3,4</sup>

**1**

CONTAINS UP TO 5x MORE  
GLUCORAPHANIN



A POWERFUL SOURCE OF  
SULFORAPHANE

## PROTECTION OF ORGANS FROM DAMAGE DURING INTENSE EXERCISE

Intense exercise can impact the health of our organs as well as our muscles. Through the anti-inflammatory and antioxidant pathways it activates, initial studies have found that sulforaphane could help protect organs from oxidative damage during periods of intense exercise.<sup>5</sup>

**2**

## REFERENCES

- <sup>1</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8685487/>
- <sup>2</sup> <https://pubmed.ncbi.nlm.nih.gov/34004418/>
- <sup>3</sup> <https://journals.physiology.org/doi/full/10.1152/japplphysiol.00293.2009>
- <sup>4</sup> <https://www.sciencedirect.com/science/article/pii/S2213453022000738>
- <sup>5</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7070986/>
- <sup>6</sup> <https://www.tandfonline.com/doi/full/10.4161/epi.22609>

# Glucoraphanin for Athletic Performance

Glucoraphanin is a bioactive molecule found naturally in some plants – most notably broccoli. When eaten, glucoraphanin is converted in our gut into its active form (called sulforaphane).

Sulforaphane then enters our cells and exerts several different metabolic effects, which together serve to boost our production of antioxidants, reduce inflammation and improve our cell's ability to function, produce energy and repair damage.

Due to the effects of sulforaphane in our cells, glucoraphanin has been extensively researched for its beneficial effects on human health across a range of different areas – including boosting athletic performance. Early-stage human, rodent and cell-culture studies suggest that adding more glucoraphanin to your diet could support muscle growth, improve muscle recovery and help prevent damage to muscles and organs following strenuous exercise, making it a valuable nutrient for athletes looking for a performance edge.

3

## REDUCED BODY FAT

Various studies have indicated that glucoraphanin can drive changes in metabolism, which can help to reduce body fat levels through a variety of mechanisms (including reversing leptin resistance, converting inert 'white fat' to active 'brown fat' that burns energy<sup>8,9</sup> and altering the composition of the microbiome to a more favourable profile<sup>9</sup>.)

5

## GREATER MUSCLE GROWTH

Initial studies have found that sulforaphane acts to suppress the production of myostatin in muscle cells. Myostatin is a muscular protein which acts to limit muscle growth, suggesting that glucoraphanin supplements could help boost muscle growth.<sup>6</sup>

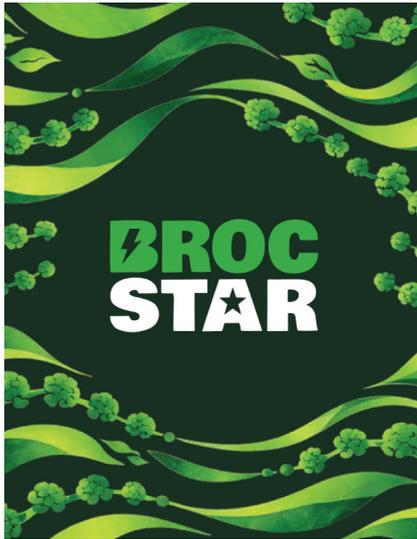
4

## IMPROVED CARDIOVASCULAR HEALTH

There is a growing body of research indicating that glucoraphanin can help support the heart health and the health of our cardiovascular system<sup>10</sup> (for example, by reducing LDL cholesterol (LDL) levels<sup>11</sup> and the risk of cardiac health events<sup>12</sup>), which offers promise for athletes looking to keep their heart and circulation in peak condition.

## REFERENCES CONTINUED

<sup>7</sup><https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8947770/> <sup>8</sup> <https://www.frontiersin.org/articles/10.3389/fphar.2021.665894/full> <sup>9</sup> <https://www.kanazawa-u.ac.jp/latest-research/44719> <sup>10</sup> <https://www.hindawi.com/journals/omcl/2015/407580/> <sup>11</sup> <https://onlinelibrary.wiley.com/doi/10.1002/mnfr.201400863> <sup>12</sup> <https://jamanetwork.com/journals/jama/fullarticle/191962>



## About **BrocStar** SuperSoup

BrocStar SuperSoup is a unique delivery vector for glucoraphanin. It's made using a unique glucoraphanin-rich broccoli called BrocStar (also known as GRextra) that developed over decades, is backed by patented research from the Quadram Institute and clinical trials run with Norfolk NHS hospitals, supported by public research grants from Innovate UK.

Just one bowl of BrocStar SuperSoup contains a once-weekly dose of glucoraphanin – the equivalent of eating 5 heads of raw broccoli or taking 14 tablets of a leading glucoraphanin supplement. This makes it the most powerful, convenient and cost-effective solution on the market for adding glucoraphanin to your diet.

BrocStar SuperSoup is also rich in fibre and Vitamins C & B6, calcium and folic acid, which together also contribute to maintaining a healthy metabolism, bone health, energy production, the reduction of fatigue and maintaining a healthy immune system – all of which are all crucial for athletes looking to perform at their best.

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