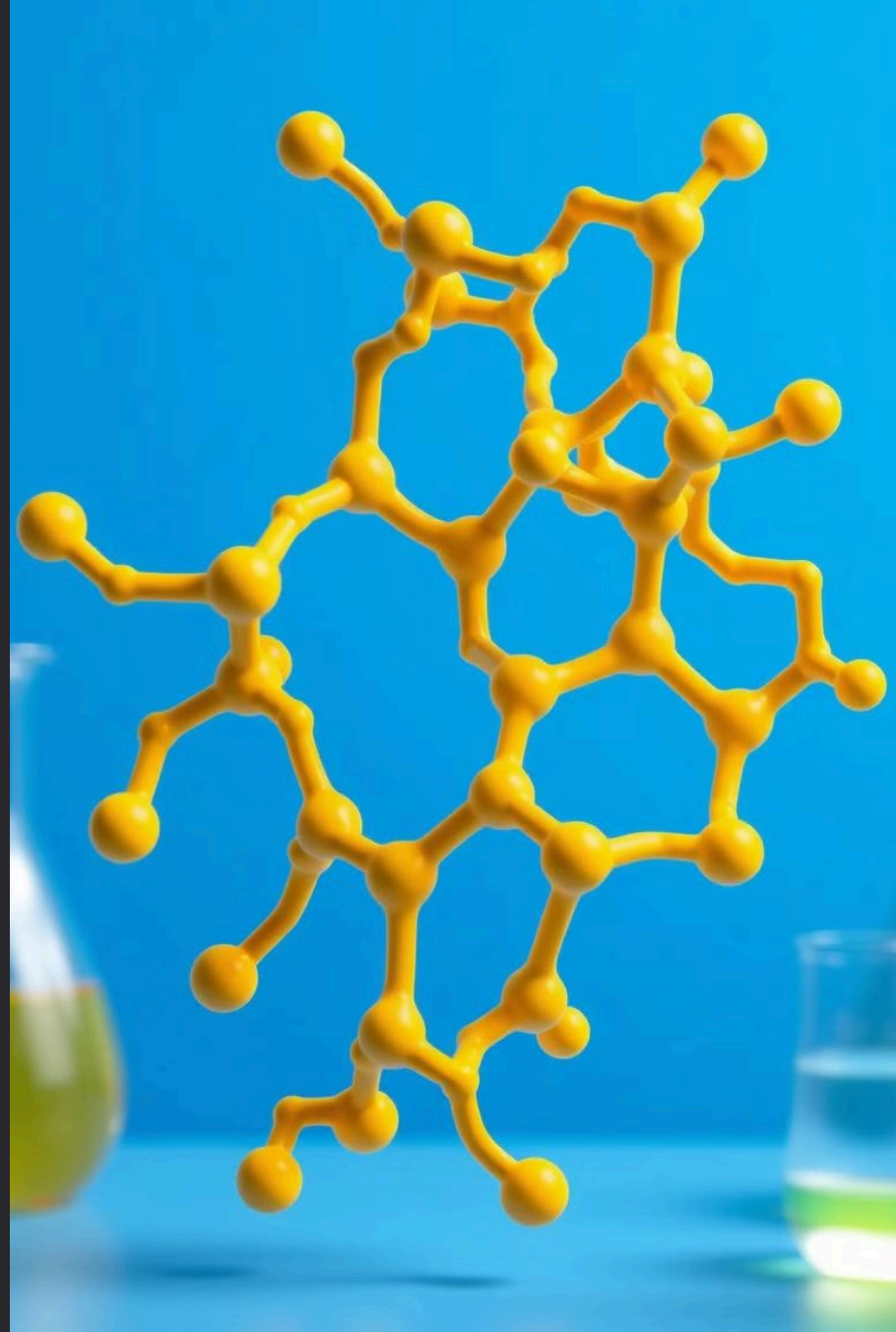
SS-31 W/ Levocarnitine: A Mitochondrial-Targeting Peptide

SS-31, also known as Elamipretide, is a promising peptide that targets mitochondria. It has shown potential in reversing mitochondrial dysfunction and treating various diseases.

This peptide's unique ability to cross the blood-brain barrier makes it particularly interesting for neurodegenerative disorders.



Mitochondrial Function and SS-31

1

Energy Production

Mitochondria are vital for cellular metabolism. They generate ATP, the energy currency of cells.

2

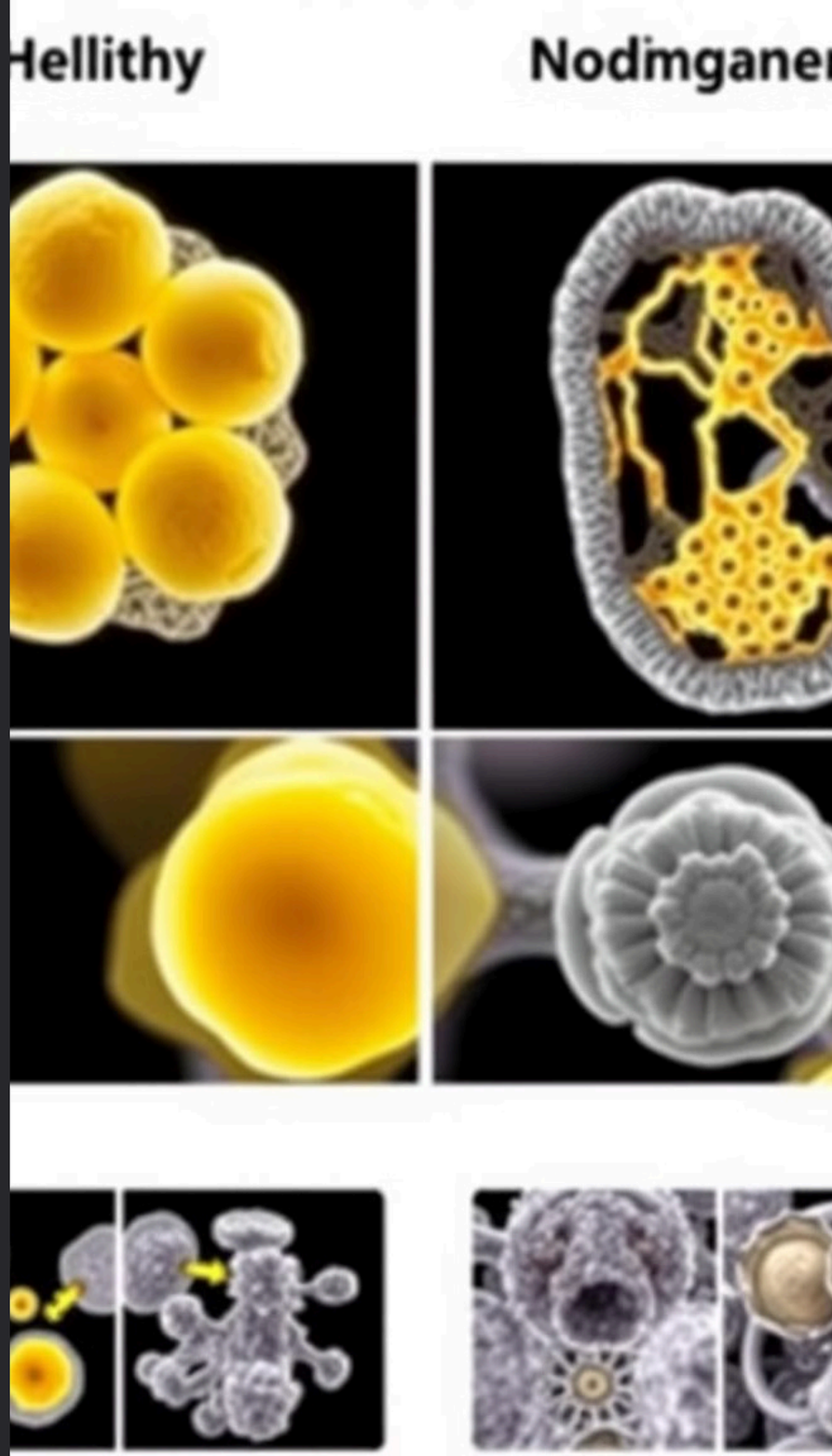
Dysfunction

Mitochondrial dysfunction is linked to various diseases. It can lead to oxidative stress and cellular damage.

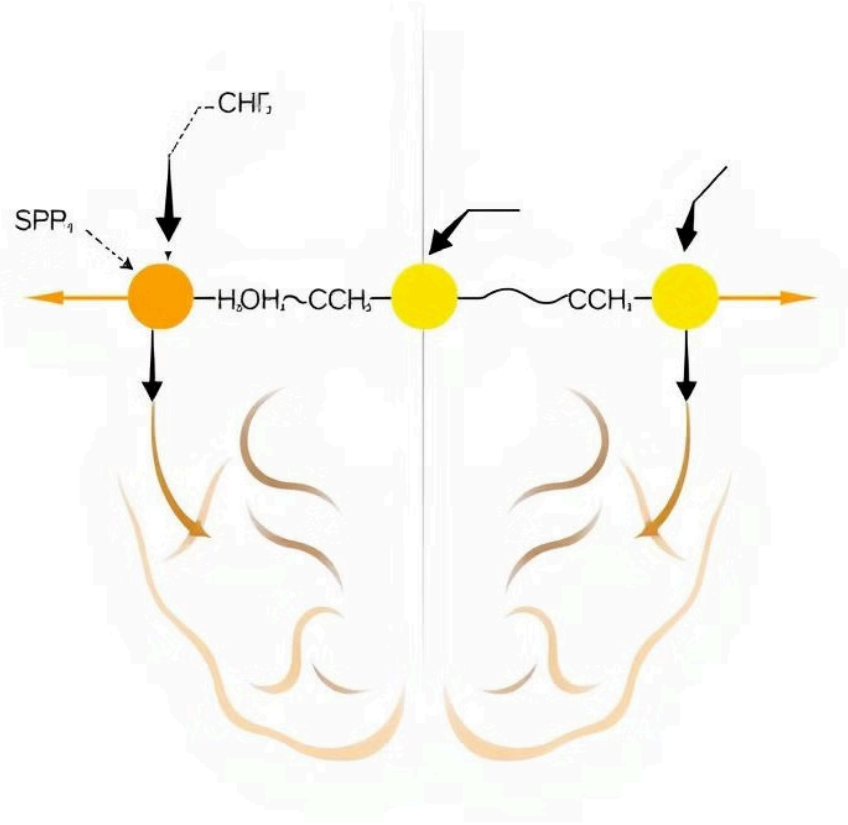
3

SS-31 Action

SS-31 targets the inner mitochondrial membrane. It helps eliminate harmful free radicals and reduces oxidative stress.



SS-31



Unique Properties of SS-31

1 Blood-Brain Barrier Penetration

SS-31 can cross the blood-brain barrier. This makes it effective for treating neurological disorders.

2 Mitochondrial Targeting

The peptide concentrates in the inner mitochondrial membrane. It specifically targets the source of cellular dysfunction.

3 ROS Elimination

SS-31 neutralizes reactive oxygen species. This reduces oxidative stress and cellular damage.

Neurodegenerative Disorders and SS-31

Amyotrophic Lateral Sclerosis (ALS)

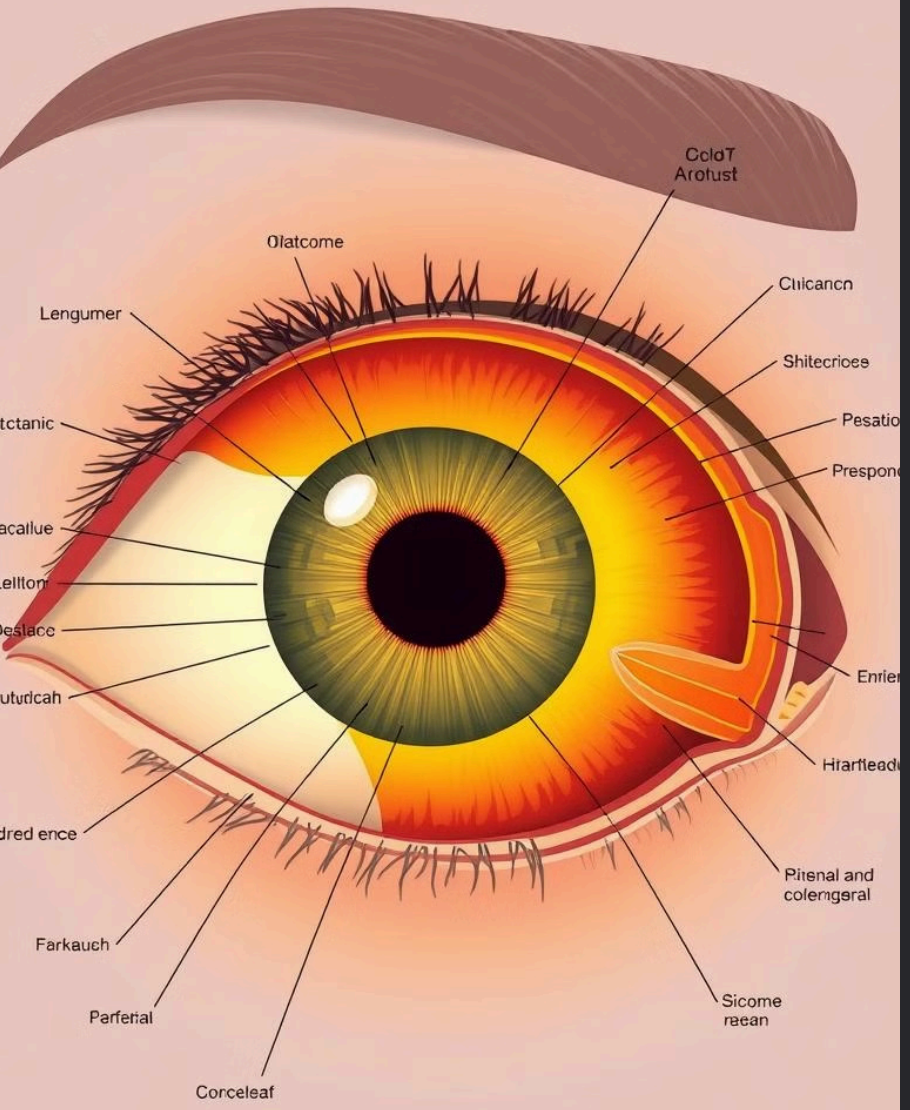
SS-31 may slow ALS progression. It could protect motor neurons from mitochondrial damage.

Alzheimer's Disease

The peptide shows promise in reducing cognitive decline. It may protect brain cells from oxidative stress.

Friedreich Ataxia

SS-31 could improve mitochondrial function in this genetic disorder. It may help manage symptoms and slow progression.



SS-31 in Ophthalmology

Glaucoma Treatment

SS-31 may protect retinal ganglion cells. It could prevent vision loss in glaucoma patients.

Mechanism of Action

The peptide reduces oxidative stress in the eye. It may improve mitochondrial function in ocular tissues.

Potential Benefits

SS-31 could slow or halt glaucoma progression. It may offer a new approach to preserving vision.

Metabolic and Cardiovascular Applications

Diabetes

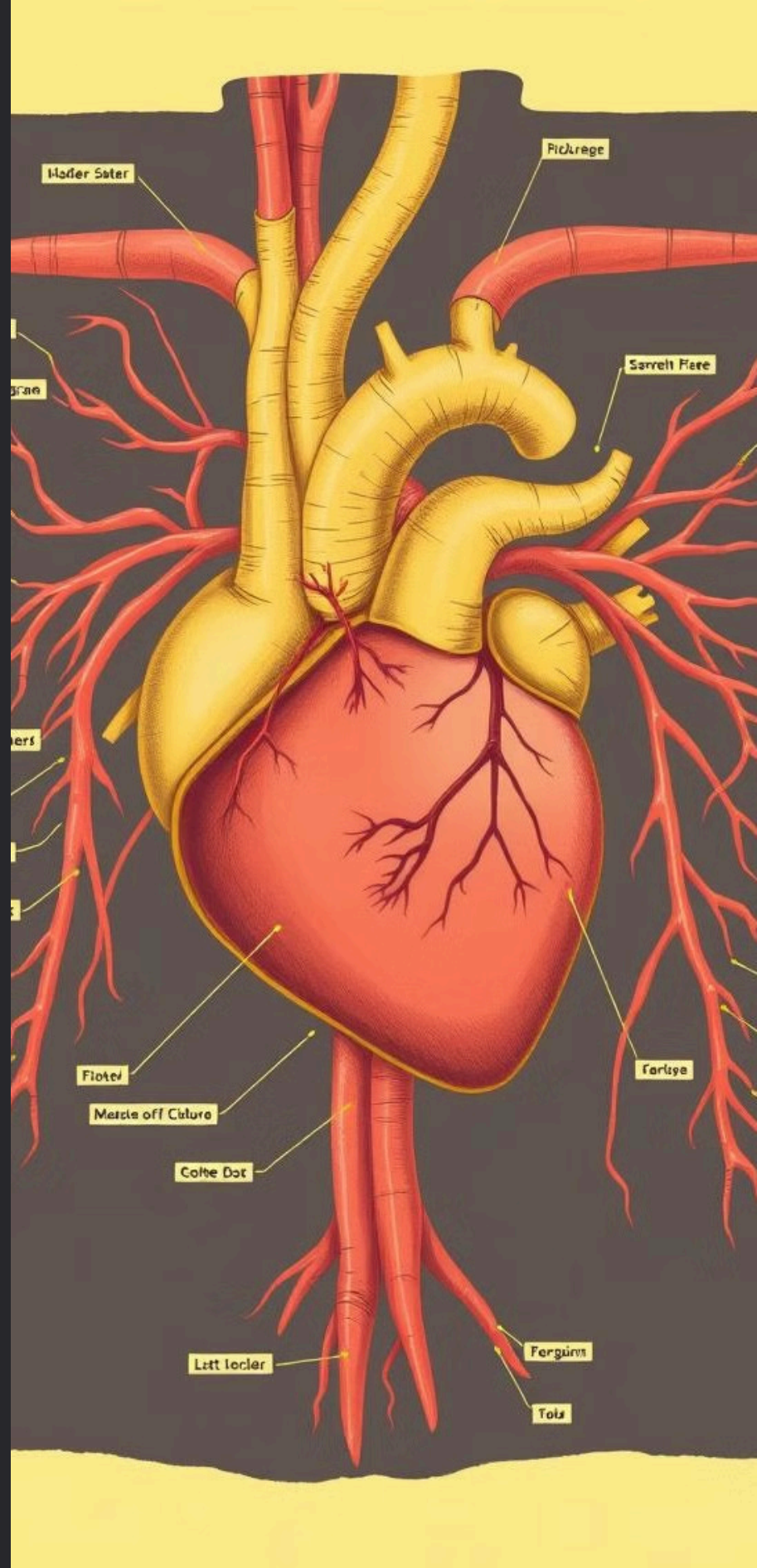
SS-31 may improve insulin sensitivity. It could help manage blood glucose levels.

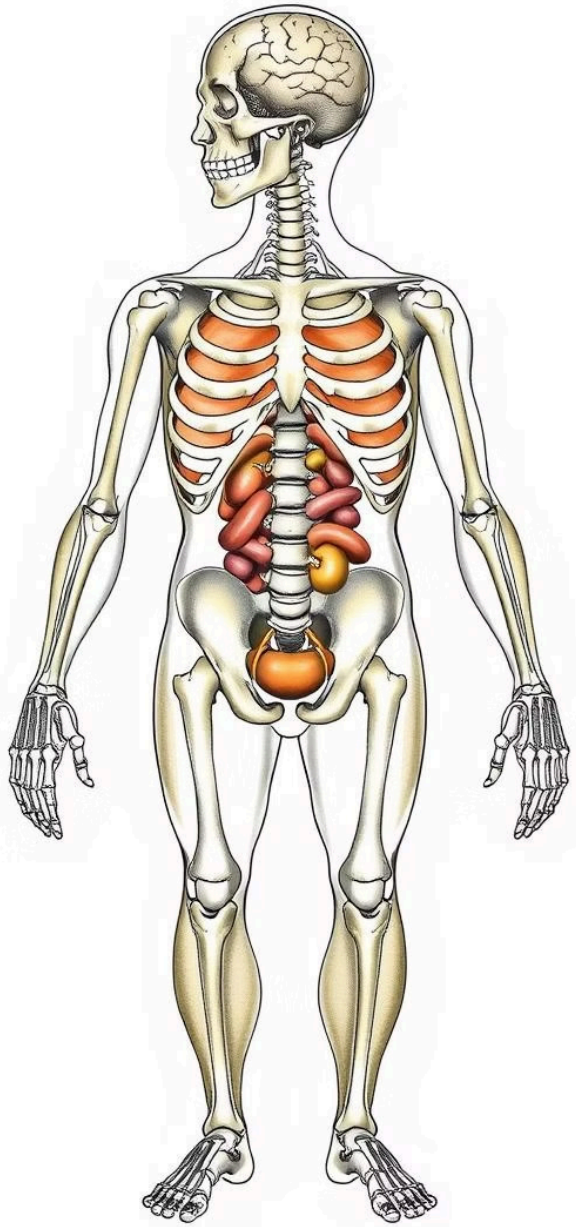
Heart Failure

The peptide shows promise in ischemia-reperfusion injury. It may protect heart tissue during cardiac events.

Atherosclerosis

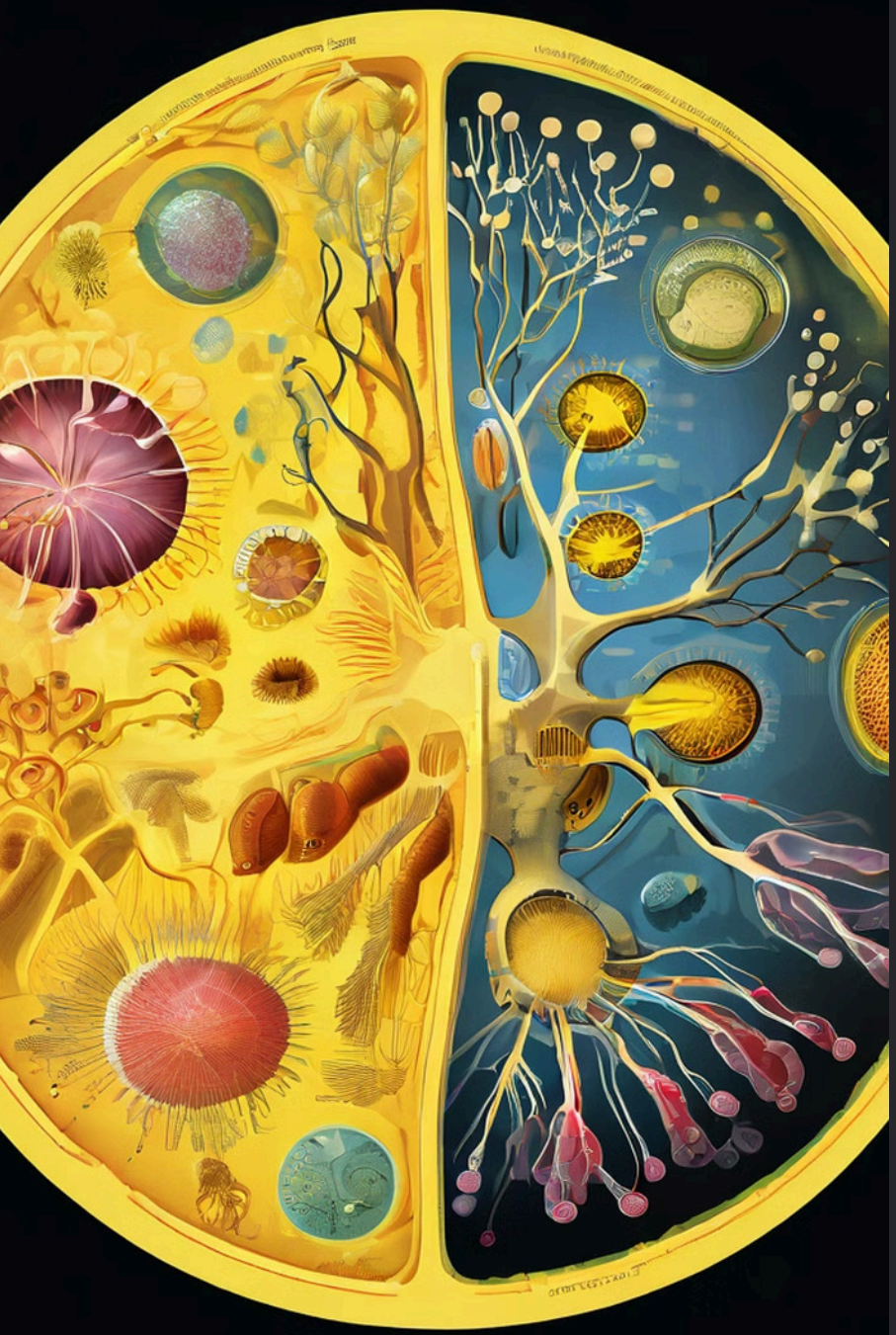
SS-31 could reduce plaque formation. It may improve vascular health in atherosclerosis patients.





Other Potential Applications of SS-31

Condition	Potential Benefit
Skeletal Muscle Weakness	Improved muscle strength and function
Traumatic Brain Injury	Reduced neuronal damage and improved recovery
Kidney Fibrosis	Slowed progression of kidney disease



SS-31 and Anti-Aging Research

1

Mitochondrial Theory of Aging

This theory links aging to mitochondrial dysfunction. SS-31 may address this root cause.

2

Free Radical Theory

Aging is associated with increased oxidative stress. SS-31 could reduce this damage.

3

Potential Anti-Aging Effects

SS-31 may slow cellular aging. It could potentially extend healthspan and lifespan.

SS-31 Dosing and Administration

SS-31, also known as Elamipretide, is supplied in 6mL vials containing 50 mg/mL of the peptide.

Each vial contains a total of 300 mg of SS-31.

The recommended dosage is 20 units (10mg) injected subcutaneously (SQ) daily.