



RipFACTOR[®]
MUSCLE ACCELERATOR



**ACCELERATE
YOUR GAINS**



PLT
HEALTH SOLUTIONS
GROWTH THROUGH INNOVATION

**MORE STRENGTH, ENDURANCE, AND
MUSCLE MASS STARTING AT 14 DAYS**
A CLINICALLY-VALIDATED, CONCENTRATED HERBAL FORMULA

CLINICAL STUDY RESULTS SUPPORT COMPELLING CLAIMS

Statistically significant improvements beginning at 14 days

- 2 clinical studies support **strength, endurance, muscle & testosterone messaging**
- Statistically significant results start **at 14 days**
- Improved overall **body strength**
- Enhanced **muscle endurance**
- Increased **muscle size**
- Improved **lean body mass**
- Supports improvements in **both free and total testosterone levels**
- Dose response supports **targeted SKUs**



UP TO
4X GREATER
IMPROVEMENT IN
Muscle Size**

UP TO
2X GREATER
IMPROVEMENT IN
Muscle Endurance**

UP TO
5X GREATER
IMPROVEMENT IN
Lower Body Strength**

UP TO
5.6X GREATER
IMPROVEMENT IN
Upper Body Strength**



**** Results compared to placebo at Day 56 with Ultra-Performance dose**

COMPOSITION

A synergistic blend of two botanical extracts. Over 2,000 herbs were assessed for achieving optimal muscle gains

SPHAERANTHUS INDICUS FLOWER HEADS

- A traditional Ayurvedic botanical, also known as East Indian Globe Thistle, the flower heads of this plant have been used for rejuvenation, physical performance, muscle growth and longevity



MANGIFERA INDICA BARK

- The mango tree – known to scientists as *Mangifera indica* - was domesticated in India over 4,000 years ago. The bark of the tree has medicinal uses reported across the many locales where it grows, including antioxidant, anti-inflammatory and vasodilation.



Nature-Based. Safe. Sustainable.

TRADITIONS & ANECDOTES

Sphaeranthus indicus

AYURVEDIC LEARNINGS

- Traditional texts document use for increasing rejuvenation, physical strength, muscle growth, intelligence, and longevity

~AND~

ANECDOTAL HINTS

- During clinical study with *S. indicus*, a large number subjects, who consumed the *S. indicus* composition, reported **increased energy levels** and **physical activity**

Could there be other botanicals that potentiate this activity?

SEARCHING FOR SYNERGY

Thousands of herbs evaluated, 100+ shortlisted for screening

eNOS SCREEN

- Endothelial nitric oxide synthase (eNOS) induced nitric oxide (NO) production was evaluated in vitro (cellular model)

ESTABLISHING SYNERGY

- *Mangifera indica* (Mango) was selected as the botanical to include with *S. indicus*.
- Mangiferin, a xanthone glycoside, is a major bioactive constituent of *M. indica*.
- Laila found mango bark to be especially concentrated in mangiferin.
- *M. indica* and *S. indicus* were combined in various ratios and tested in vitro for eNOS activity
- The synergistic blend (LI12542F6 or MyoTOR) that contains two parts of SI and one part of MI was selected for further development.

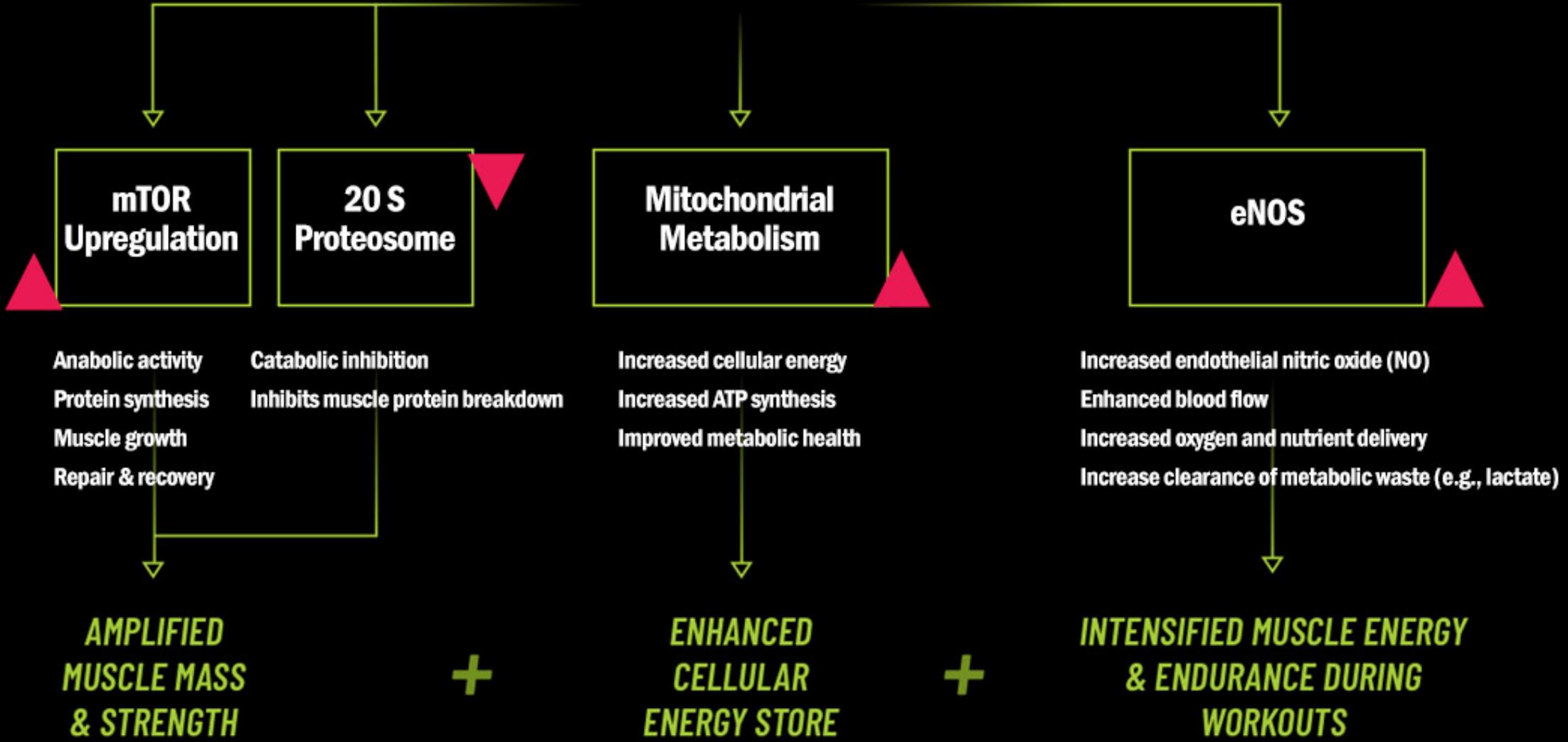
How does this help exercise?

Recent research findings suggest that activated eNOS enhances mitochondrial function and mitochondrial biogenesis, thus helps to improve strength and endurance.

Multiple Mechanisms of Action



Muscle Growth, Strength, and Endurance





CLINICAL STUDIES

EXCITING RESULTS FOR
EXERCISE PERFORMANCE
AND GAINS



DOSE: PERFORMANCE VS ULTRA

Comparisons and Recommendations

*TWO DOSES OF RipFACTOR HAVE BEEN SHOWN
TO SUPPORT MUSCLE BUILDING*

Performance Dose

Standard	Water-Dispersible
325 mg/d	425 mg/d

Ultra-Performance Dose

Standard	Water-Dispersible
650 mg/d	850 mg/d

TWO RIPFACTOR CLINICAL TRIALS

Efficacy demonstrated for standard and water-dispersible versions, in trained and untrained men at different doses

	Study 1	Study 2
Subjects	Trained men	Untrained men
Intervention*	650 mg RipFACTOR STD	425 or 850 mg RipFACTOR WD
Training	<ul style="list-style-type: none"> • 8 weeks • Whole body training • Bench press, leg press, cable pull-down, treadmill, dynamometer • 3 days per week 	<ul style="list-style-type: none"> • 8 weeks • Training only on measured endpoints • 1 set of bilateral bench press and leg extension resistance training sessions • 3 days per week • 2x exercise group did the same type of exercise but 2 sets instead of 1

*Dose of actives for 650 mg RipFACTOR STD and 850 mg WD are identical

EXCITING CLINICAL STUDY RESULTS WITH COMPELLING CLAIMS

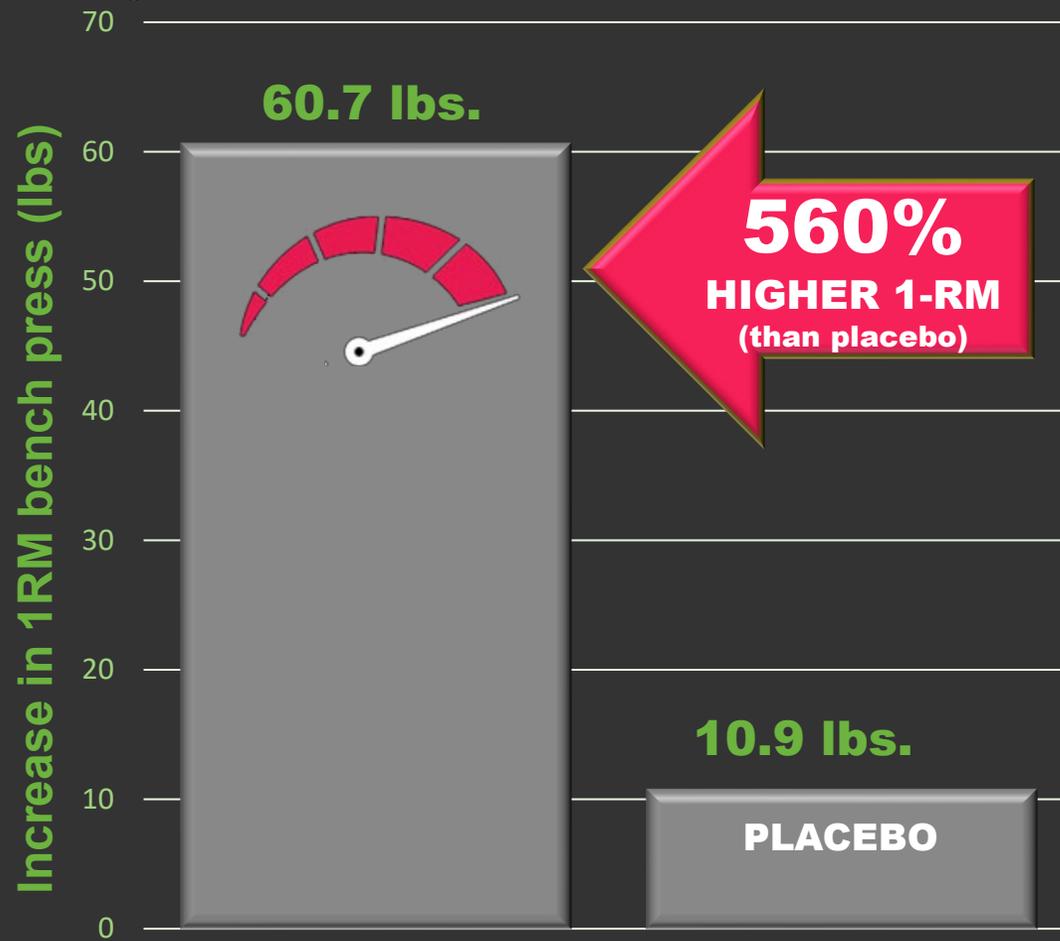
Study #1

- 40 subjects (n=20/group)
- Healthy men 18-40 years old
- Recreational athletes / Gym goers (past 6 months)
- Mean weight 68.05 kg
- 650 mg/day **RipFACTOR** or Placebo
- 56-day duration



IMPROVEMENTS IN STRENGTH

Statistically significant improvement at 14 days, >5x greater improvement in upper body strength compared to placebo at day 56



IMPROVEMENTS IN STRENGTH

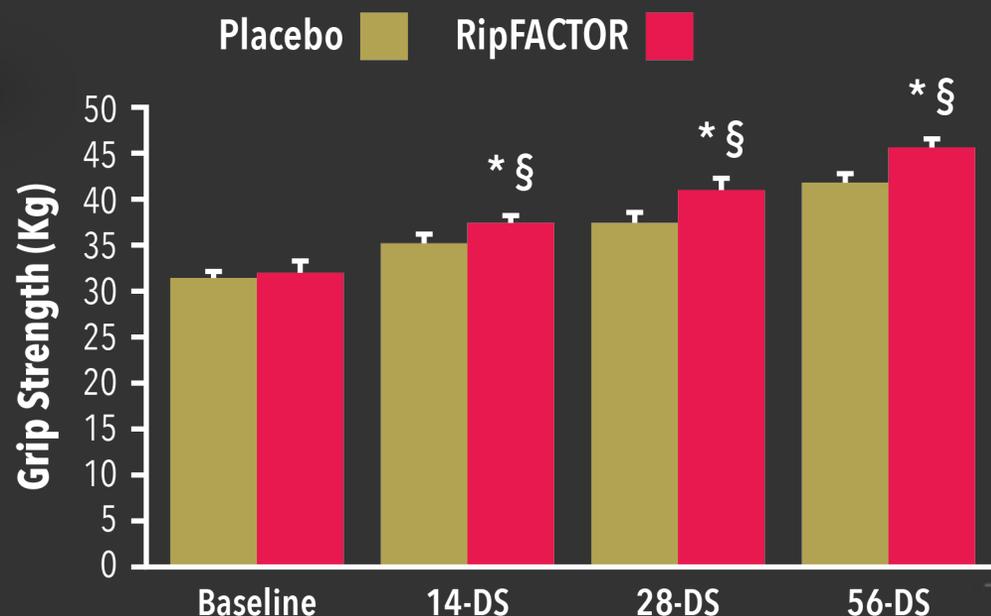
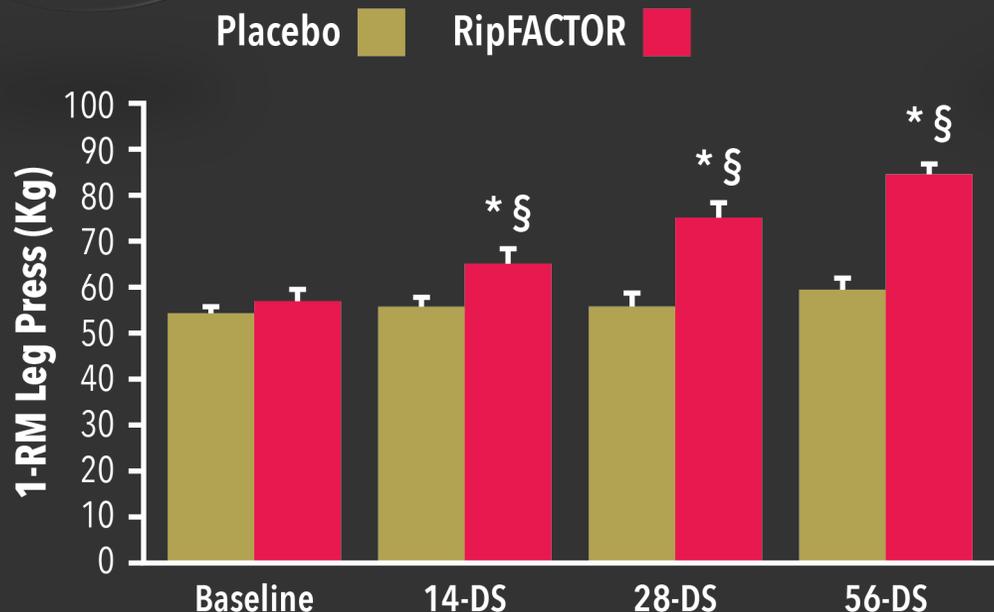
Statistically significant improvement at 14 days, 5x greater improvement in upper body strength compared to placebo at day 56.



Leg Press



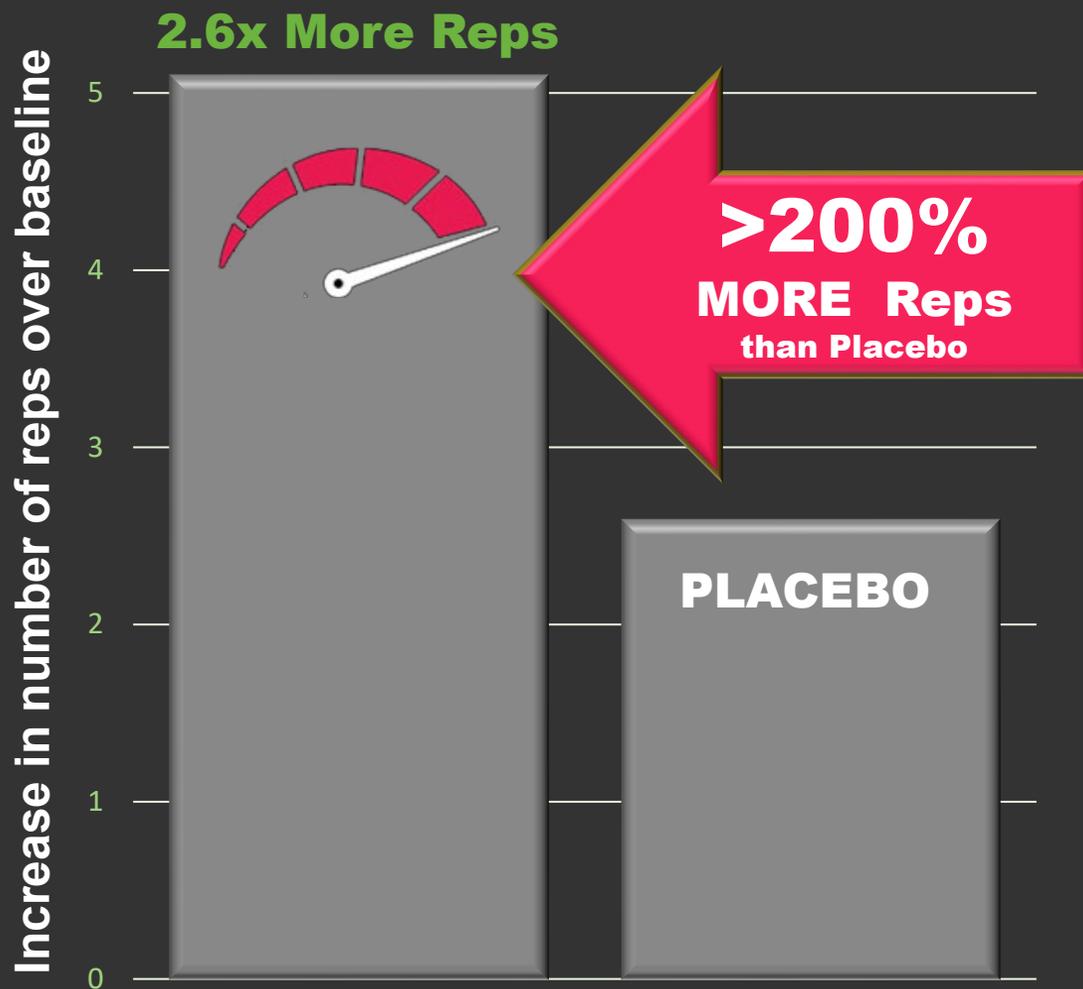
Grip Strength



* $p \leq 0.05$, between group comparison of mean change from baseline
 § $p \leq 0.05$, between group comparison of mean values

MUSCLE ENDURANCE

Statistically significant improvement at 14 days, 2.6x improvement compared to placebo at day 56.

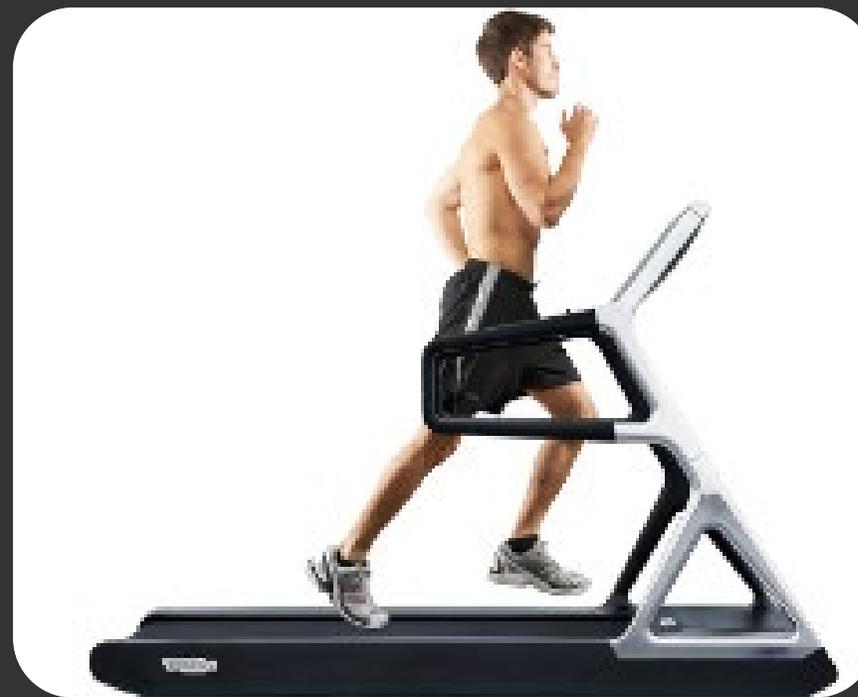
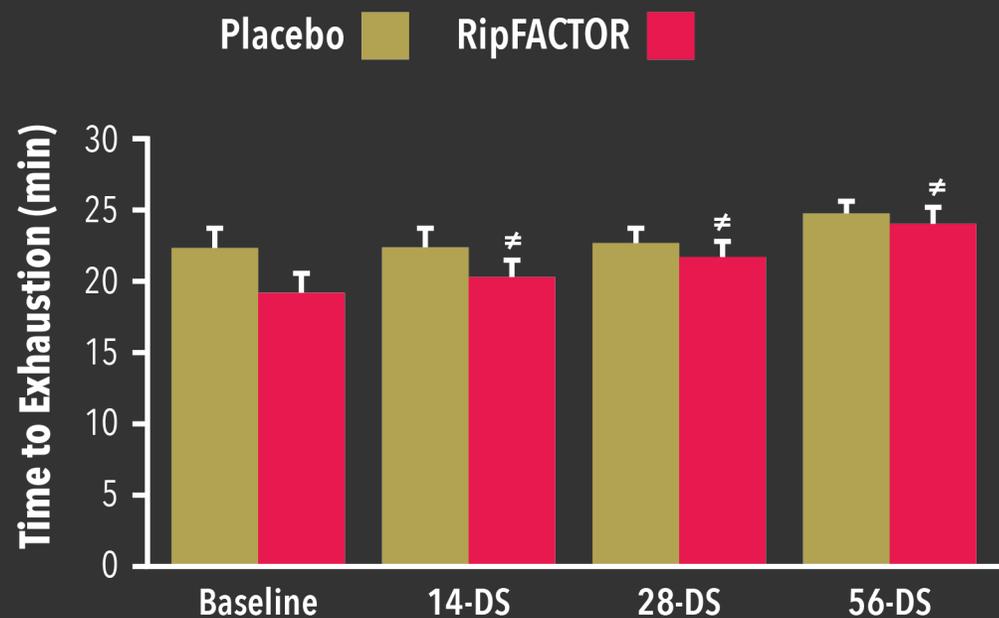


Cable Pulldown Reps Increase at 56 Days

MUSCLE & CARDIO-RESPIRATORY ENDURANCE

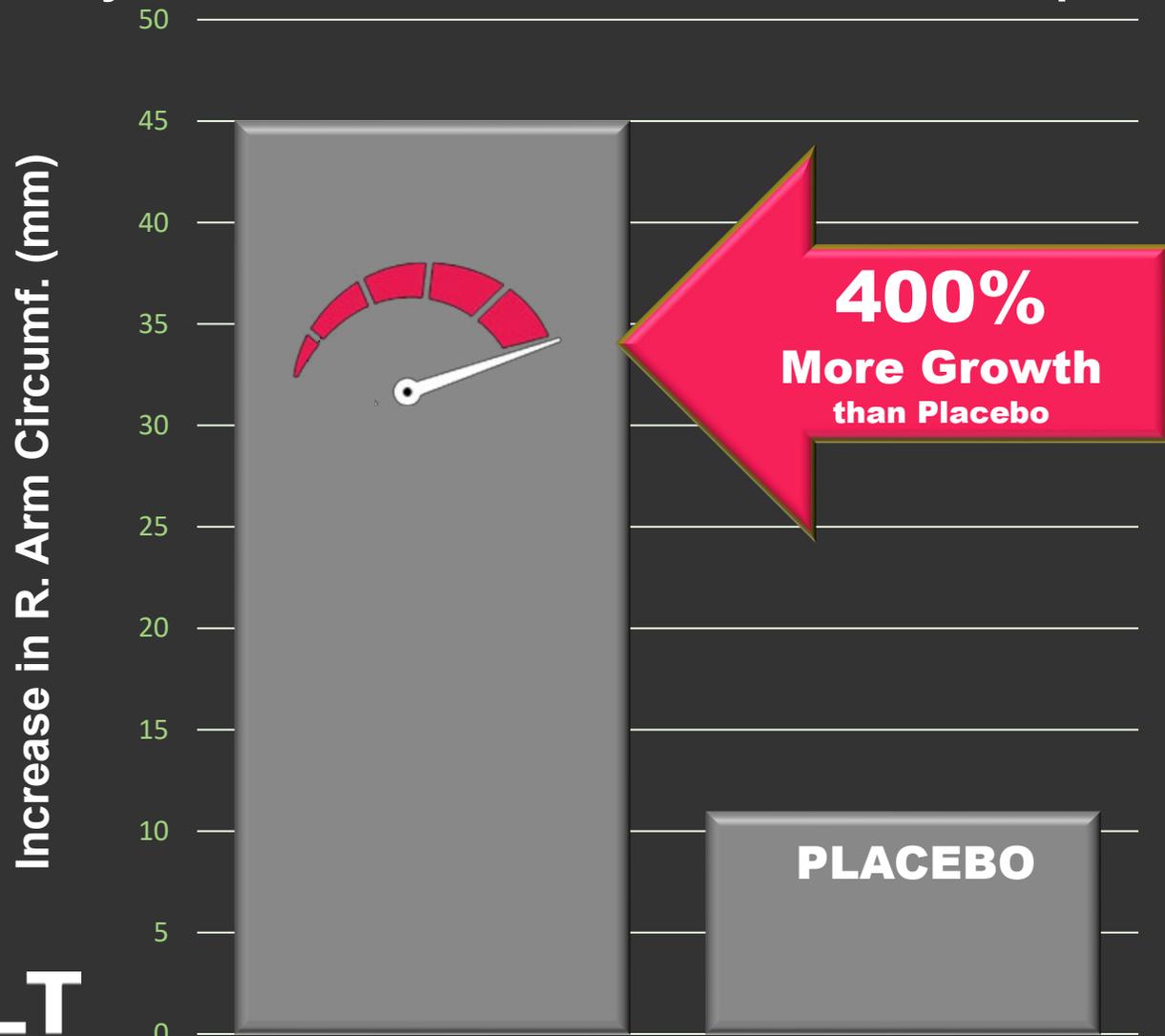
Statistically significant improvement at 14 days, 4.5x improvement of muscle endurance compared to placebo at day 42.

Time to Exhaustion



MUSCLE GROWTH

Significantly better muscle size increases. Results top out at 4x placebo.



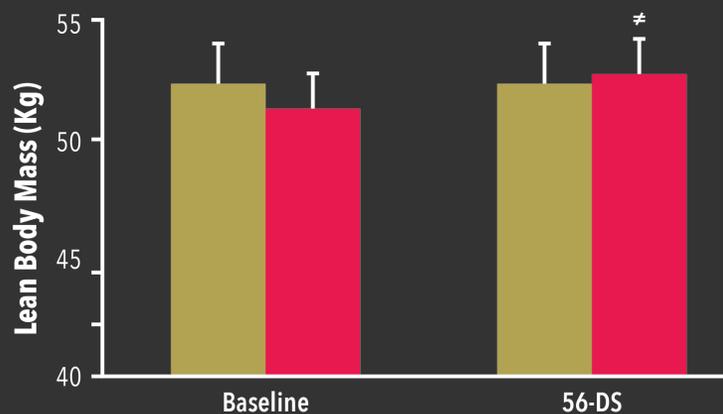
Mean change in R. Arm Circumference at Day 56

BODY COMPOSITION

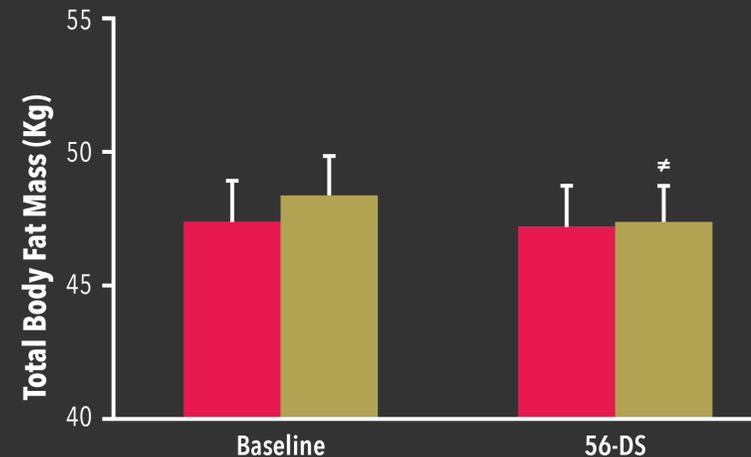
Statistically significant improvements in body composition

Placebo  RipFACTOR 

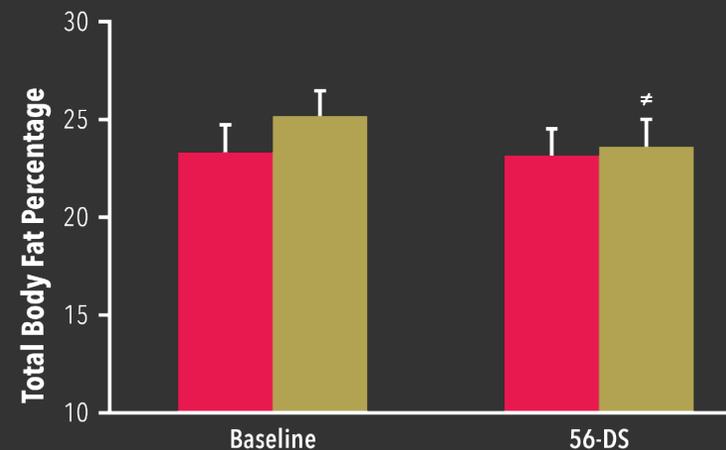
Lean Body Mass



Total Body Fat



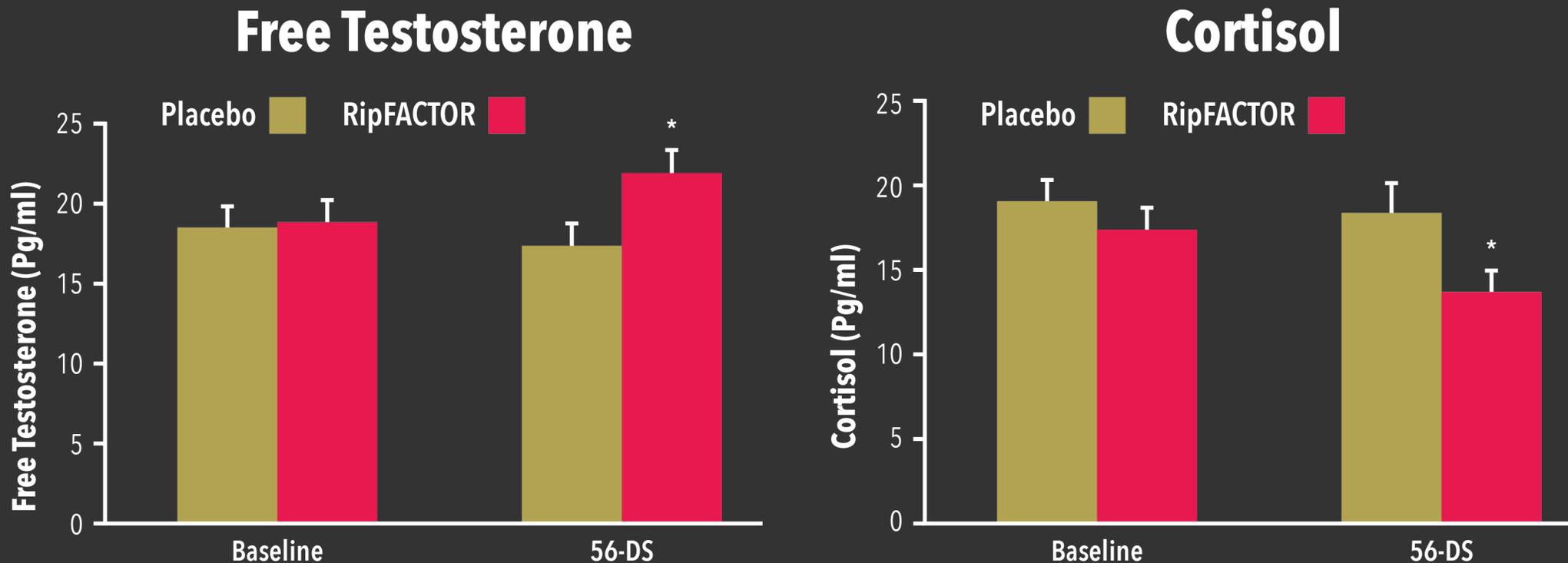
Percent Body Fat



* p ≤ 0.05, between-group comparison of mean change from baseline

KEY BIOMARKERS: TESTOSTERONE AND CORTISOL

RipFACTOR significantly increases testosterone and decreases cortisol



* $p \leq 0.05$, between group comparison of mean change from baseline

§ $p \leq 0.05$, between group comparison of mean values

TESTOSTERONE AND CORTISOL

Free Testosterone and Cortisol/Testosterone Ratio improved for both levels of supplementation

Free Testosterone (mg/dl)

	(N=26)		(N=25)		(N=25)		(N=23)					
	RipFACTOR 425mg (A)		RipFACTOR 825mg (B)		Placebo I (C)		Placebo II (D)		A-C p value	A-D p value	B-C p value	B-D p value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
Baseline	2.13	0.877	1.98	0.79	2.09	0.6945	2.07	0.378				
Day 56	2.79	0.803	2.72	0.887	2.29	0.416	2.32	0.572	0.0336**	0.0706	0.0338	0.07

T:C Ratio

	(N=26)		(N=25)		(N=25)		(N=23)					
	RipFACTOR 425mg (A)		RipFACTOR 825mg (B)		Placebo I (C)		Placebo II (D)		A-C p value	A-D p value	B-C p value	B-D p value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
Baseline	5267	2627	5981	2711	5543	1944	5223	1628				
Day 56	3640	1587	3982	2585	5169	1749	5171	1720	0.0256**	0.0158**	0.0432**	0.0283**

UNIQUE STUDY DESIGN WITH COMPELLING RESULTS

Study #2

- 101 subjects (n=23-25 per group)
- Healthy men 19-29 years old
- Training-naïve participants
- 56-day duration
 - 5 clinic visits
 - 24 training visits

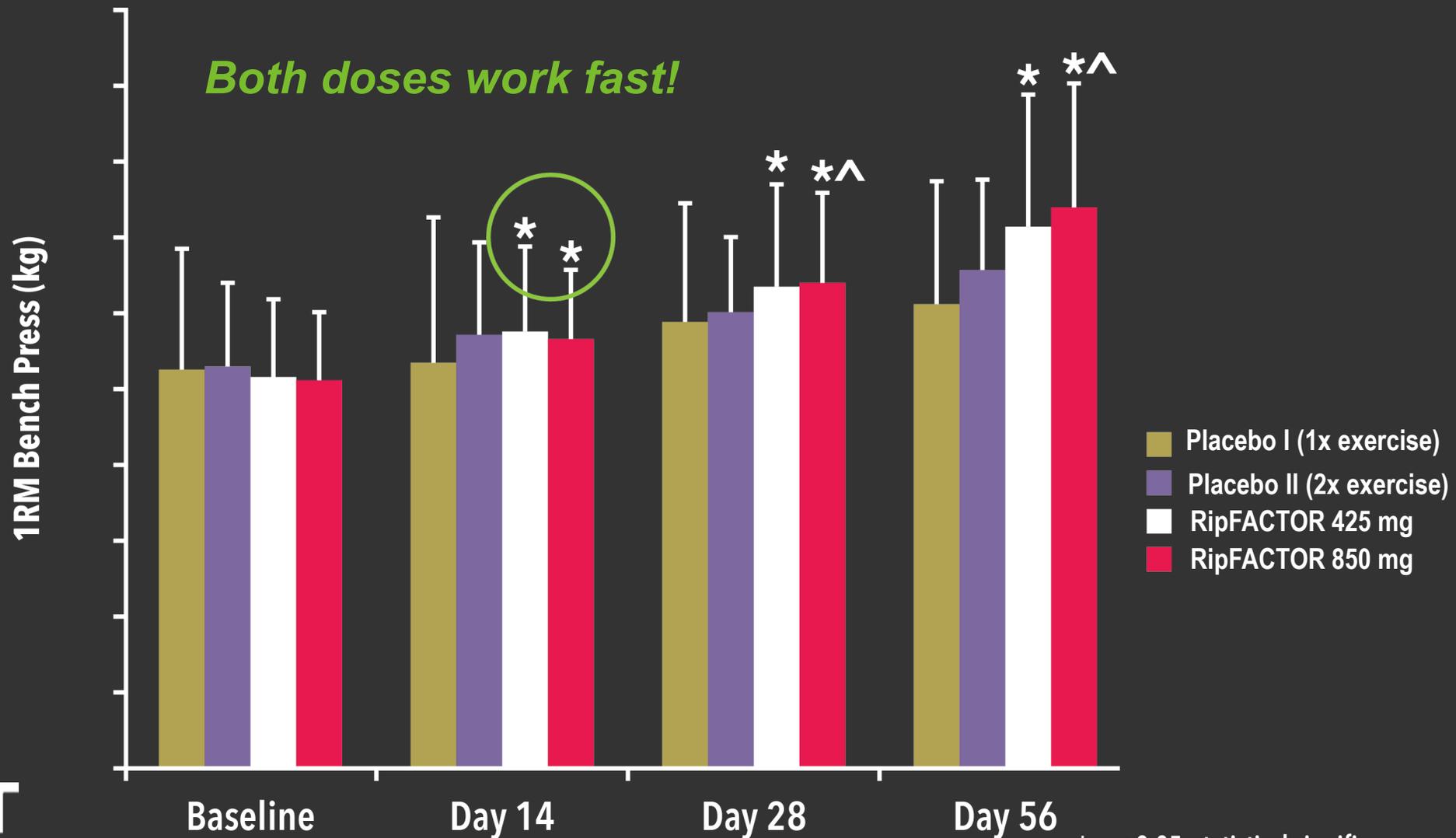
*We wanted to know:
“Does RipFACTOR
perform as well as
double the exercise?”*

Group A	Group B	Group C/Placebo I	Group D/Placebo II
425 mg/d + exercise	850 mg/d* + exercise	exercise	2x exercise

*Water-dispersible form of RipFACTOR delivering the same quantity of actives as in Study #1

IMPROVEMENTS IN STRENGTH

Consumption of 850 mg/d improved strength greater than double exercise



* $p \leq 0.05$, statistical significance vs placebo I
^ $p \leq 0.05$, statistical significance vs placebo II

STUDY #2 – OTHER CONFIRMATORY FINDINGS

Water-dispersible form provides comparable benefits to the standard form

STRENGTH (1 RM LEG EXTENSION)

425 mg group increased by 23.8%; 850 mg group increased by 28.3%; placebo group increased by 11.7%; double exercise placebo group increased by 16.7%

MUSCLE ENDURANCE (# OF REPS)

- **Bench press:** 425 mg group increased by 99.4%; 850 mg group increased by 112%; placebo group increased by 70.5%; double exercise placebo group increased by 72.9%.
- **Leg Extension:** 425 mg group increased by 101.6%; 850 mg group increased by 122.9%; placebo group increased by 67.2%; double exercise placebo group increased by 85.5%.

HORMONES

- **Free Testosterone:** 425 mg group increased by 31%; 850 mg group increased by 37.4%; placebo group increased by 9.6%; double exercise placebo group increased by 12%
- **Serum Cortisol:** 425 mg group decreased by 8.9%; 850 mg group decreased by 12.8%; placebo group *increased* by 7.3%; double exercise placebo group *increased* by 12.1%.
- **C/T Ratio:** 425 mg group decreased 30.9%; 850 mg group decreased by 33.4%; placebo group decreased by 6.7%; double exercise placebo group decreased by 1%.

TWO CLINICAL DESIGNS SUPPORT BENEFITS

Strength, endurance and favorable hormonal profiles

TWO DOSING OPTIONS

PERFORMANCE

- **325 mg/d STD/425 mg/d WD** for strength benefits at 14 days, endurance benefits at 56 days
- Muscle benefits at 56 days
- Strength benefits vs double exercise control at 28 days

ULTRA-PERFORMANCE

- **650 mg/d STD/850 mg/d WD** for strength benefits at 14 days, endurance benefits at 28 days
- Muscle benefits at 56 days
- Strength benefits vs double exercise control at 28 days
- Endurance benefits vs double exercise control at 56 days
- Standard and Water Dispersible formats show similar efficacy
- Dose response can help target different customers



IMPACTFUL BENEFITS

LOW-DOSE BOTANICAL FORMULATION

THE 60-DAY JOURNEY – A STORY WE CAN TELL CONSUMERS**

Body changes create measurable results starting at 2 weeks versus competition at TWELVE WEEKS

DAY ONE
RIPFACTOR STARTS

DAY 14
SIGNIFICANT INCREASES
IN STRENGTH

DAY 30
ENDURANCE GOES THROUGH
THE ROOF

DAY 60
A TRANSFORMED
BODY

PHYSIOLOGICAL CHANGES

- Myosin heavy chain proteins build up
 - Enhanced protein synthesis
 - Anabolic mTOR pathway ignites protein synthesis and new muscle
 - Decrease in catabolic muscle breakdown
 - Decreased cortisol
- Increased cellular energy stores via mitochondrial metabolism
 - Activated endothelial nitric oxide synthase supplies more blood and nutrients to muscle cells
 - Clearing metabolic waste boosts performance & recovery
- Increased lean body mass
 - Lower body fat
 - Increased free testosterone

RESULTS

- Up to 15% increase in strength
- Up to 2x Reps over baseline!
- Up to 55% increase in upper body strength*
- Up to 31% increase in lower body strength*
- Up to 4x Improvement in Muscle Size**
- Up to 2x improvement in Muscle Endurance**
- Up to 5.6x Improvement in Upper Body Strength**
- Up to 5x Improvement in Lower Body Strength**



TARGET DEMOGRAPHICS

Wide-ranging benefits makes RipFACTOR ideal for different consumers



ALL Customers

Fast-acting • Better training • Small, versatile dosing • Botanical source



Hardcore Sport

Strength • Muscle size • Muscle Quality • Testosterone



Competitive Athletics

Energy • Endurance • Strength • Physique



General Fitness/Wellness

Energy • Endurance • Strength • Body Composition



Graceful Aging

Strength • Muscle Mass • Testosterone • Body Composition



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PLT
HEALTH SOLUTIONS

GROWTH THROUGH INNOVATION

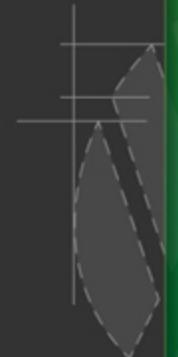
**MORE STRENGTH, ENDURANCE, AND
MUSCLE MASS STARTING AT 14 DAYS**

A CLINICALLY VALIDATED, CONCENTRATED HERBAL FORMULA



PLTSPORTS

PRE-CLINICAL SCIENCE ADDENDUM



TOXICITY STUDIES

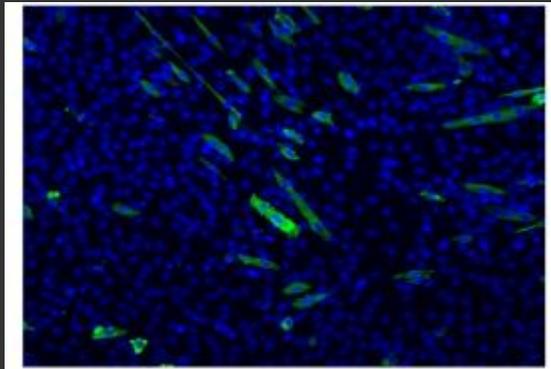
A full complement of tests

Acute Oral Toxicity in SD Rats	LD50 > 2000 mg/kg
Acute Dermal Toxicity Study in SD Rats	LD50 > 2000 mg/kg
Primary Skin Irritation Study in Rabbits	Irritant to skin but reversible
Primary Eye Irritation Study in rabbits	Irritant to eye but reversible
28-day Sub-acute Toxicity Study	NOAEL is 1500 mg/kg
Ames Test (500 ug/plate)	Non-mutagenic
In vivo Micronucleus test in SAM mice	Non-genotoxic (2000 mpk)

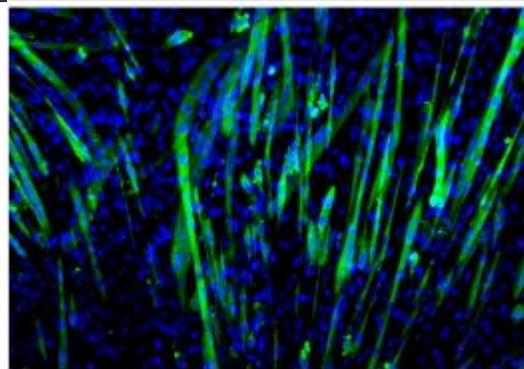
MECHANISMS OF ACTION

RipFACTOR increases Myosin Protein

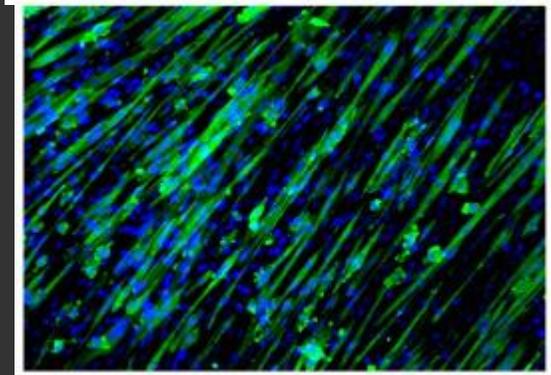
Vehicle control



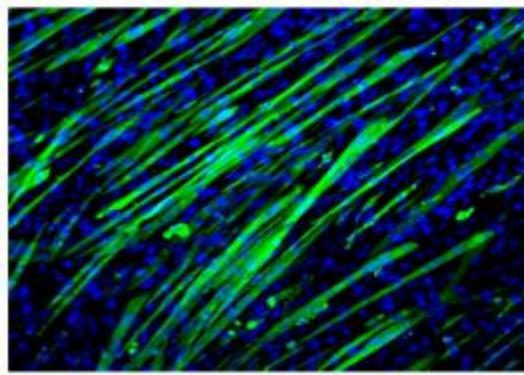
1 ng/ml RipFACTOR



5 ng/ml RipFACTOR



25 ng/ml RipFACTOR

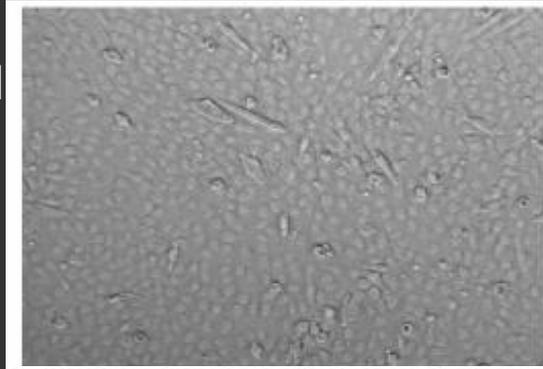


Immunofluorescence images showing RipFACTOR increase in Myosin Heavy Chain protein expression in C2C12 myotubes.

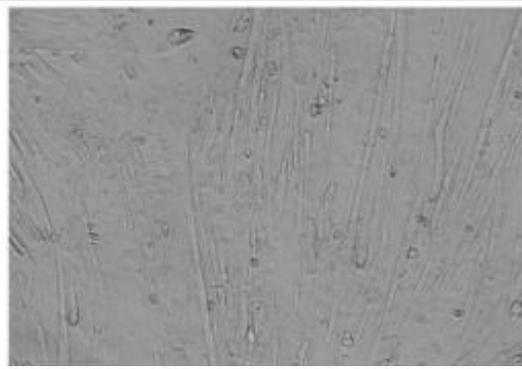
MECHANISMS OF ACTION

RipFACTOR increases myogenesis *in vitro*

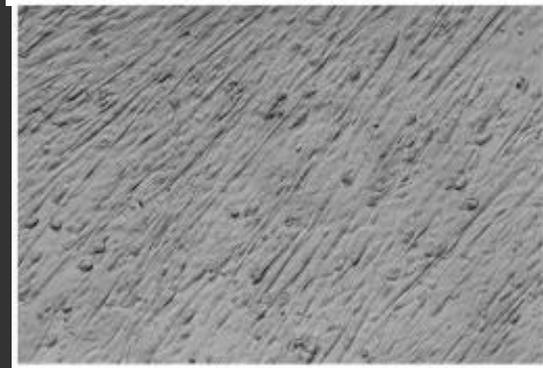
Vehicle control



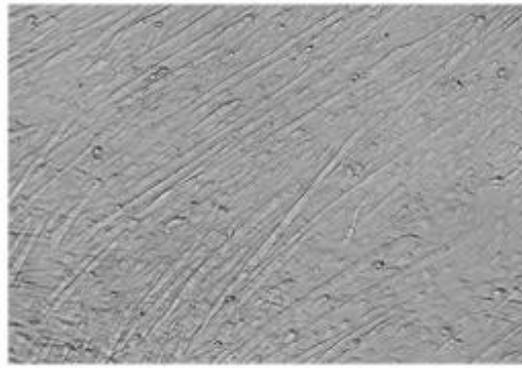
1 ng/ml RipFACTOR



5 ng/ml RipFACTOR



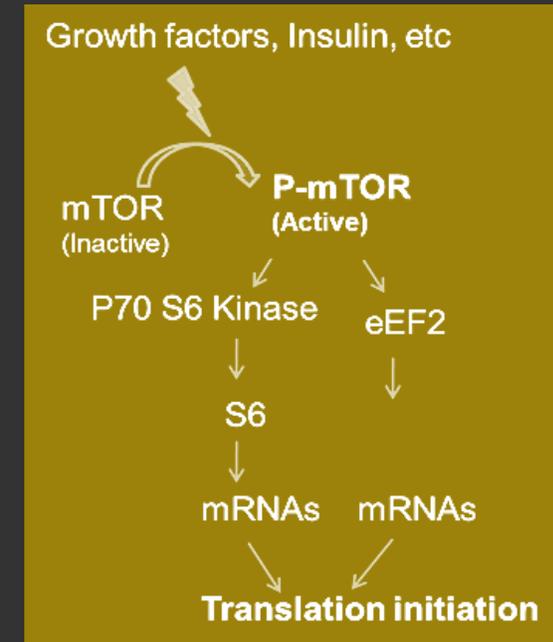
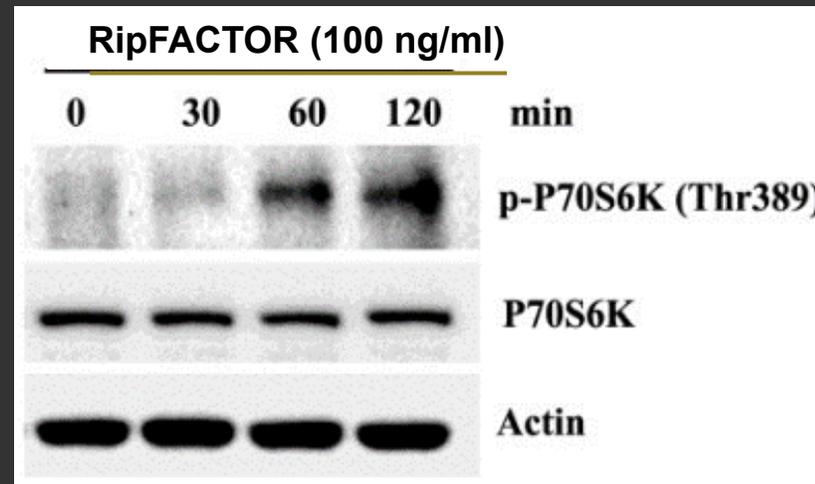
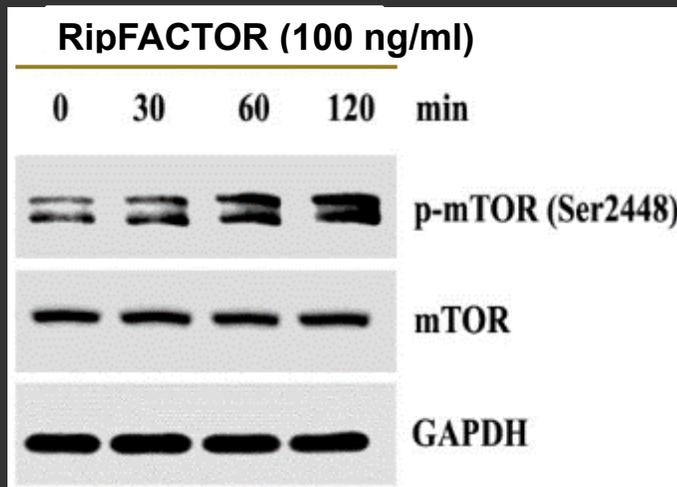
25 ng/ml RipFACTOR



Phase contrast micrographs showing RipFACTOR increase in myogenesis (myotube formation) in C23C12 mesenchymal myoblasts

MECHANISMS OF ACTION

RipFACTOR activates protein synthesis via activating mTOR signaling in rat skeletal muscle cells

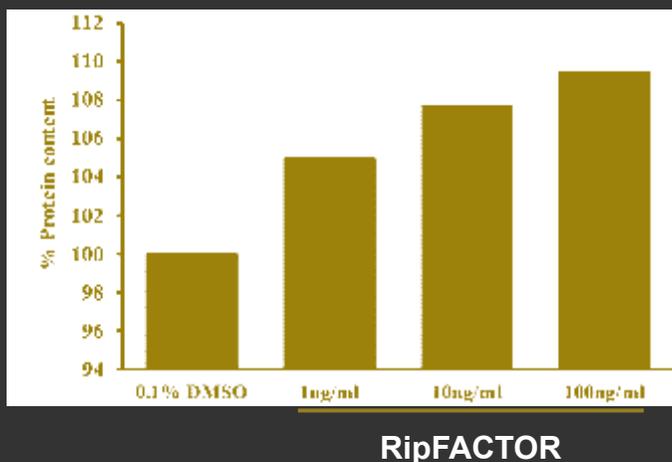


Protein synthesis or translation process is regulated via mTOR signaling

MECHANISMS OF ACTION

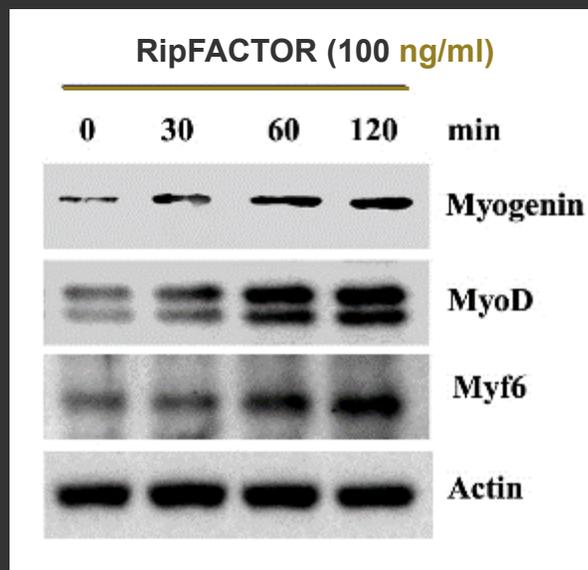
RipFACTOR acts on the foundations of muscle building

Enhanced protein synthesis



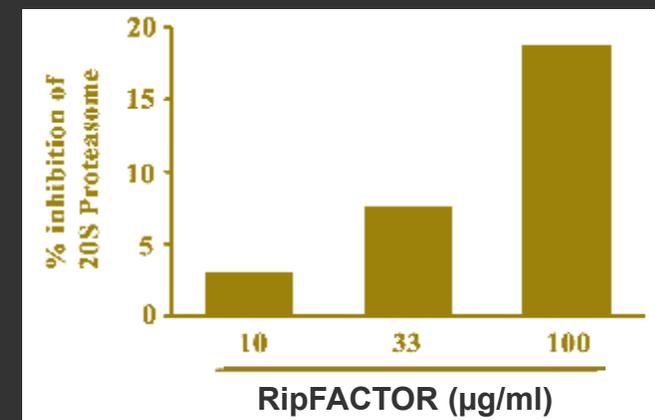
RipFACTOR enhances protein content in L6 rat skeletal myoblast cells

Muscle-specific transcription factors



RipFACTOR upregulates muscle-specific transcription factors in L6 skeletal muscle cells

Inhibition of protein catabolism

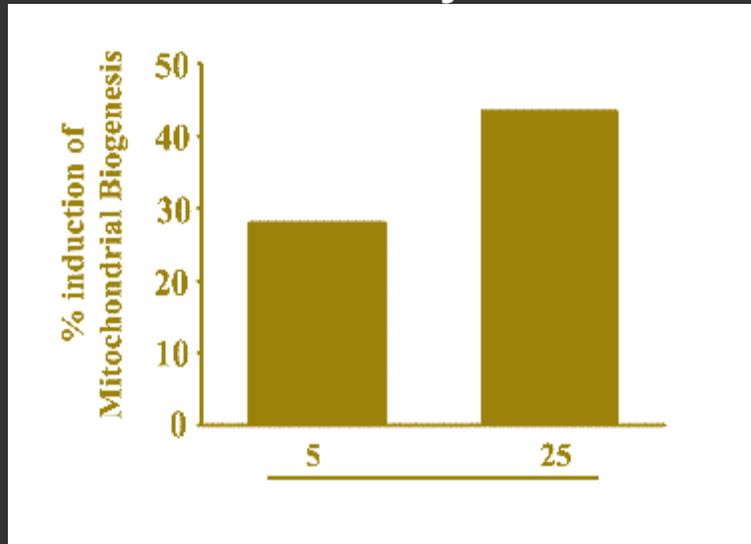


RipFACTOR inhibits 20S proteasome activity in L6 skeletal muscle cells

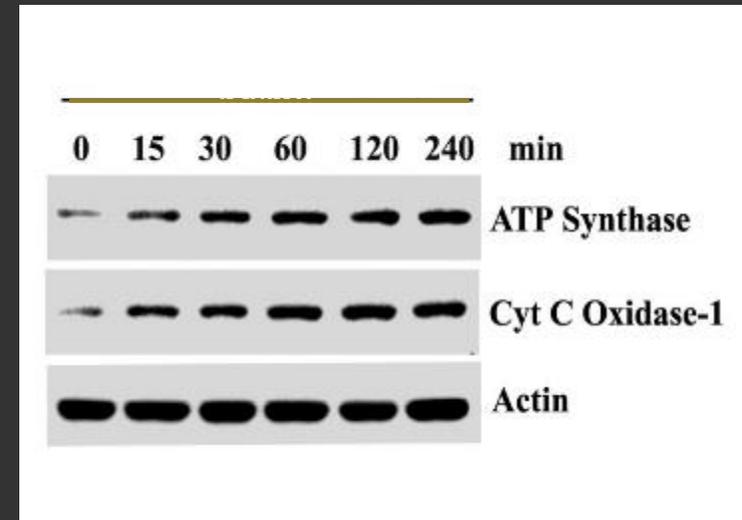
MECHANISMS OF ACTION

RipFACTOR improves mitochondrial function in rat skeletal myoblasts

Mitochondrial biogenesis in rat skeletal myoblasts

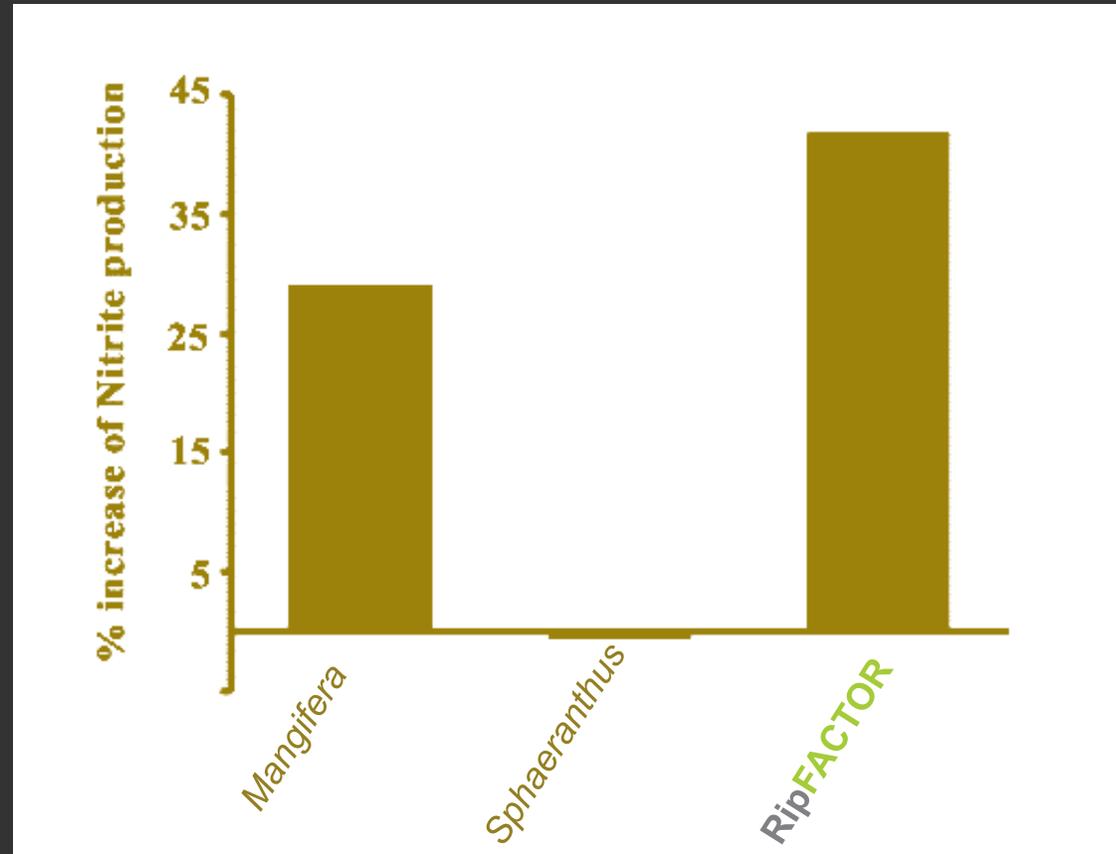


OX-PHOS marker proteins in rat skeletal myoblasts



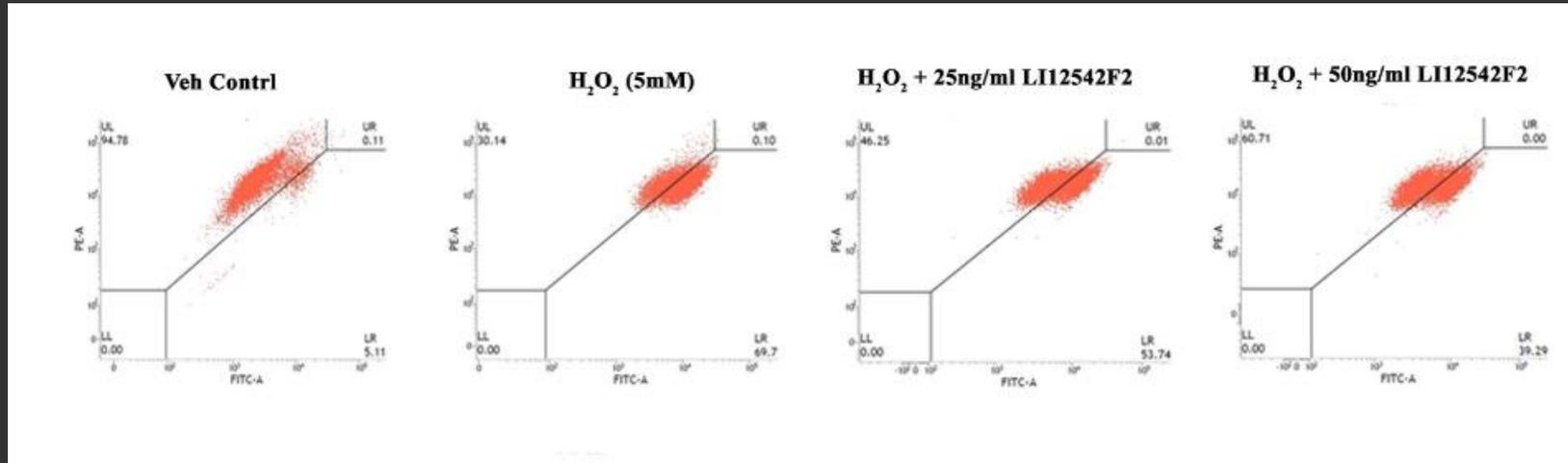
RipFACTOR improves mitochondrial biogenesis and upregulates key proteins of the mitochondrial oxidative phosphorylation (OX-PHOS) pathway

RipFACTOR increases nitric oxide production in human endothelial cells



MECHANISMS OF ACTION

RipFACTOR stabilizes mitochondrial membrane potential in H₂O₂ induced L6 rat skeletal myoblasts



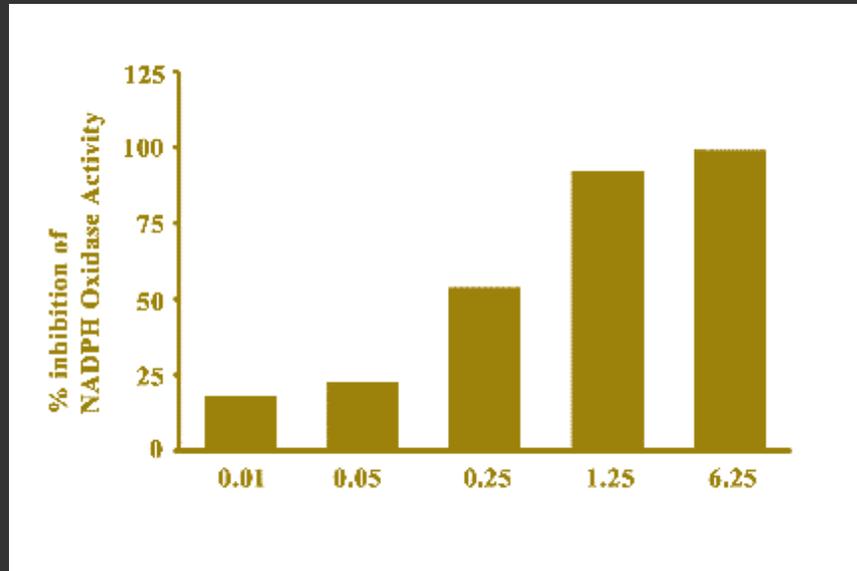
Treatments	% cell population with depolarized membrane potential	% cell population recovered from membrane depolarization
Vehicle Control (Baseline)	5.11	-
Induction (H ₂ O ₂ , 5mM)	69.7	-
H ₂ O ₂ plus RipFACTOR (25ng/mL)	53.74	24.71
H ₂ O ₂ plus RipFACTOR (50ng/mL)	39.29	47.08

RipFACTOR helps improve mitochondrial function via stabilizing mitochondrial membrane potential under oxidative stress conditions such as endurance exercise

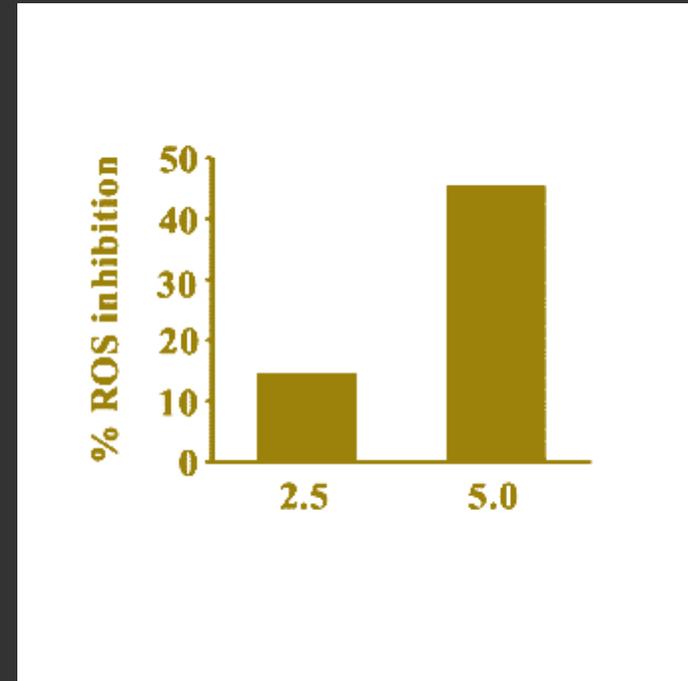
IN VITRO STUDIES

NADPH Oxidase inhibition and ROS inhibition

RipFACTOR may improve mitochondrial health



RipFACTOR shows dose-dependent ROS inhibition



CAN RIPFACTOR HELP WITH SARCOPENIA?

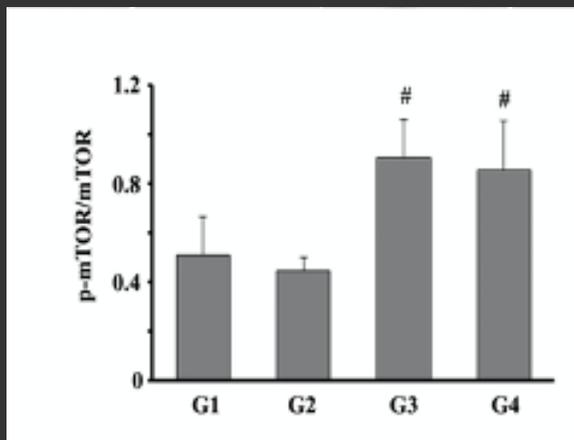
- Evaluated in a 28-day preclinical study in Sprague-Dawley rats
- Dexamethasone-induced muscle loss model

FINDINGS FROM THE ANIMAL STUDY

- Reduced loss of muscle mass in supplemented group
- Increased strength (grip) in supplemented group
- Atrogin-1 and Murf-1 (key regulatory proteins of ubiquitin proteasome pathway) normalized.
- Improved mTOR activation in the skeletal muscle



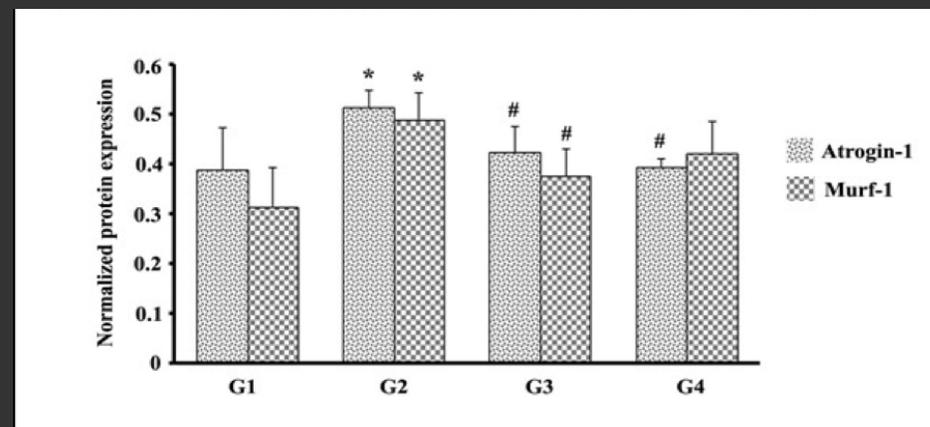
Activation of Muscle Protein Growth



Groups

G1-Vehicle control
G2-DEX
G3-DEX+LI12542F6 (250 mg/kg)
G4-DEX+HMB (400 mg/kg)

Attenuation of Muscle Protein Catabolism



DOSES

COMPARISON AND RECOMMENDATIONS



DOSE: PERFORMANCE VS ULTRA

Comparisons and Recommendations

*TWO DOSES OF RipFACTOR HAVE BEEN SHOWN
TO SUPPORT MUSCLE BUILDING*

Performance Dose

Standard	Water-Dispersible
325 mg/d	425 mg/d

Ultra-Performance Dose

Standard	Water-Dispersible
650 mg/d	850 mg/d

DOSE: EFFECTS ON MUSCLE STRENGTH

Comparison and Recommendations

Performance Domain	Outcome Measure	Performance Dose			Ultra Performance Dose			
		Sig	As early as	Study 2 relative to PLA (8 wks)	Sig	As early as	Study 1 relative to PLA (8 wks)	Study 2 relative to PLA (8 wks)
Muscle Strength	Upper Body Strength	√	2 weeks	2.2x	√	2 weeks	5.58x	2.57x
	As effective as 2x the exercise	√	2 weeks	-	√	2 weeks	-	-
	More effective than 2x the exercise	⊘	-	-	√	4 weeks	-	-
	Lower Body Strength	√	2 weeks	2x	√	2 weeks	5.17x	2.31x
	As effective as 2x the exercise	√	2 weeks	-	√	2 weeks	-	-
	More effective than 2x the exercise	√	4 weeks	-	√	4 weeks	-	-
	Grip Strength	nd	nd	nd	√	2 weeks	1.28x	-

DOSE: EFFECT ON MUSCLE SIZE

Comparison and Recommendations

Performance Domain	Outcome Measure	Performance Dose			Ultra Performance Dose			
		Sig	As early as	Study 2 relative to PLA (8 wks)	Sig	As early as	Study 1 relative to PLA (8 wks)	Study 2 relative to PLA (8 wks)
Muscle size	Arm Circumference	nd	nd	nd	√	8 weeks	4x	-

DOSE: EFFECTS ON MUSCLE ENDURANCE

Comparison and Recommendations

Performance Domain	Outcome Measure	Performance Dose			Ultra Performance Dose			
		Sig	As early as	Study 2 relative to PLA (8 wks)	Sig	As early as	Study 1 relative to PLA (8 wks)	Study 2 relative to PLA (8 wks)
Muscle Endurance	Upper Body Endurance	√	8 weeks	1.43x	√	8 weeks	1.96x	1.57x
	As effective as 2x the exercise	√	2 weeks	-	√	2 weeks	-	-
	More effective than 2x the exercise	∅	-	-	√	8 weeks	-	-
	Lower body endurance	√	8 weeks	1.5x	√	4 weeks	-	1.67x
	As effective as 2x the exercise	√	2 weeks	-	√	2 weeks	-	-
	More effective than 2x the exercise	∅	-	-	√	8 weeks	-	-

DOSE: EFFECT ON CARDIO ENDURANCE

Comparison and Recommendations

Performance Domain	Outcome Measure	Performance Dose			Ultra Performance Dose			
		Sig	As early as	Study 2 relative to PLA (8 wks)	Sig	As early as	Study 1 relative to PLA (8 wks)	Study 2 relative to PLA (8 wks)
Cardio Endurance	Time to Exhaustion	nd	nd	nd	√	2 weeks	2x	-

DOSE: EFFECTS ON BIOMARKERS

Comparison and Recommendations

Performance Domain	Outcome Measure	Performance Dose			Ultra Performance Dose			
		Sig	As early as	Study 2 relative to PLA (8 wks)	Sig	As early as	Study 1 relative to PLA (8 wks)	Study 2 relative to PLA (8 wks)
Biomarkers	Free Testosterone	√	8 weeks	-	√	8 weeks	-	-
	Total Testosterone	√	8 weeks	-	√	8 weeks	-	-
	Cortisol	⊘	-	-	√*	8 weeks	5.6x	-
	Free Testosterone: Cortisol	√	8 weeks	-	√	8 weeks	8.56x	-

* Cortisol was sig v PLA in the first study, but not in the 2nd study

DOSE: EFFECTS ON BODY COMPOSITION

Comparison and Recommendations

Performance Domain	Outcome Measure	Performance Dose			Ultra Performance Dose			
		Sig	As early as	Study 2 relative to PLA (8 wks)	Sig	As early as	Study 1 relative to PLA (8 wks)	Study 2 relative to PLA (8 wks)
Body Composition	Lean Body Mass	nd	nd	nd	√	8 weeks	48 X	-
	Total Body Fat	nd	nd	nd	√	8 weeks	4:85 X	-
	% Body Fat	nd	nd	nd	√	8 weeks	6:25 X	-