MECHANO GROWTH FACTOR

CREATING NEW MUSCLES CELLS FOR NEW GROWTH

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TABLE OF CONTENTS

INTRODUCTION TO PEPTIDES

Peptides although using some similar mechanisms for growth that steroids do are quite different. Peptides exhibit more local effects and less effects on the rest of the body and do not result in changes in the sex hormones or masculine side effects etc associated with steroids. They do not cause water retention, increase cholesterol, or have liver toxic effects. Peptides are the closer related to the bodies natural systems of growth and repair for long term, while the changes seen from sex hormones are fast and sometimes short term. This makes sense because peptides provide steady changes that will progress the musculature throughout life, while steroids are quick flashes in hormone changing eliciting an immediate response that is quickly regulated.

Without a doubt steroids will pack on the most muscle in the shortest amount of time. They are not overly expensive on the black market or hard to get. Steroids also have down sides beyond the common associated side effects or health risk. When you do a cycle of AAS, what's next?? PCT (post cycle therapy) of course. All AAS users have the same fears at the end of each cycle. They don't want to lose their hard earned gains. The gains that came so fast and so easy, but can be lost in the blink of an eye without proper PCT. And even with good PCT it's still hard to keep everything. Then there is the other evil. ESTROGEN!!! You are popping anti-estrogens's and AI's and progestin blockers that cost you a ton extra because you don't want those bitch tits or that bloat, or the sudden fat gain. AAS = great gains, followed by anxiety. Now I'm not going to knock AAS they are a cornerstone. They give undeniable results. But at the cost of side effects, and PCT anxiety and cost. So they aren't perfect. You spend your off time trying to maintain, let alone trying to make gains....

Now let's look at what happens during a cycle of peptides. Taken right with good diet and exercise just like you would for an AAS, but maybe not quite as many calories as some do on heavy cycles, you will see some small gains, some leaning out, but no where near the 20lbs of beef you put on last test/tren cycle. You might be lucky with 5lbs over the course of 6-8 weeks. But here is where it gets good. All those gains, they're yours now and forever, not going anywhere, not going to suddenly start to subside, they aren't going to result in some post cycle bloat, bitch tit formation, or fat gain. In fact your metabolism will be slightly higher from the gains. Anxiety free... no wait!!! It's better than anxiety free; you should be just as stoked now as when you started the cycle. Because after you do a cycle of peptides like IGF or MGF especially the gains are going to come better after the cycle then they did before the cycle, unlike AAS where you try to gain and then maintain.

Just to give you a hint of what is to come I'll give you a brief on the different mechanism involved with peptides and AAS. You see AAS make the adult muscle cells (myotubules) bigger, but the bigger these cells get as we all know the harder and harder it

is to make them even bigger. These myotubules are limited in size by the amount of nuclei they contain. The closer they get to being maxed the harder for them to grow and when they are maxed well that's about it.... gains will be few and far between. Myotubules don't divide like other cells so you pretty much have as many as you're going to have for the most part. This is where some people refer to the genetics. Because your genetics determines largely your # of myotubules you have, and the hormones that regulate them. Now some steroids do in fact effect the muscle stem cells and can increase the nuclei in the myotubules. The problem then lies with the fact that this process simply can not keep up with the growing muscle and eventually the stem cells are used up too quickly and the steroids ability to recruit more myotubules is diminished. Read my upcoming book "Anabolic Science" to find out more about how to manage steroids and why they lose their effectiveness.

This is where peptides make their mark. Growth factors in short lead to an increase in the potential of the myotubules to grow because they can influence the stem cell pools of the muscle which are their for growth and repair, to fuse with the adult myotubules and increase the number of nuclei. This means they can grow more again, and grow easier. Individual mechanisms for each peptide may very, but this is the overall effect they are all going for. Mechano growth factor is a new peptide that my prove to be the most effective in doing this. So after taking some peptides you will experience better gains than before, with relatively non existent side effects, no PTC, no anxiety. These are supplements with an investment in mind, a future goal beyond the current cycle, and realistic view that real gains don't have to come in 6-12 week segments but can come all year round.

WHAT MGF DOES

MGF is a splice variant of the IGF produced by a frame shift if the IGF gene. It exhibits local effects in skeletal muscle and without modification is not systemic (can't travel through the body). MGF increase the muscle stem cell count, so that more may fuse and become part of adult muscle cells. This is a process required for adult muscle cells to continue growing.

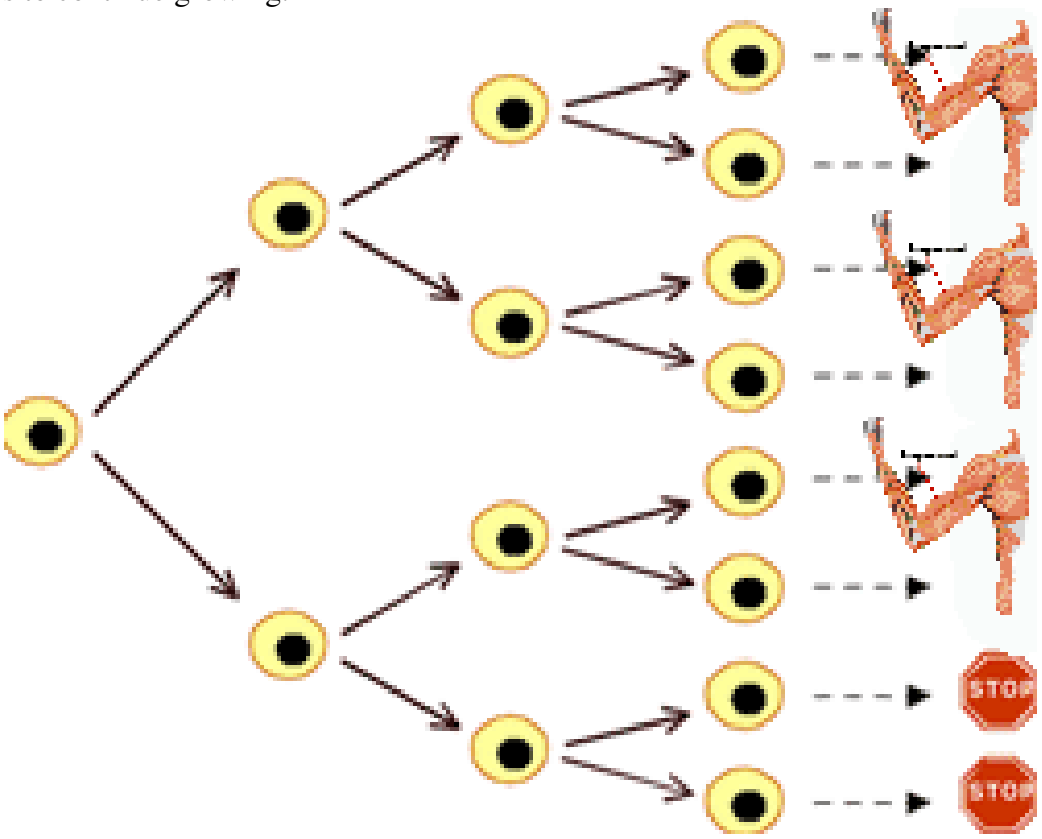


Figure 1. The cell on the left represents a satellite or stem cell in the pool. Once signaled by MGF this cell will duplicate creating 2 cells. And if it is signaled again they will again replicate and so on until they reach another signaling which will either put them in a stop or dormant state or they will fuse with the adult muscle cells.

HOW MGF WORKS

From its sequence, MGF is derived from the IGF-I gene by alternative splicing and has different 3' exons to the liver or systemic type (IGF-IEa). It has a 49 base pair insert in the human, and a 52 base pair insert in rodents, within the E domain of exon 5. This insert results in a reading frame shift, with a different carboxy (C) terminal sequence to that of systemic IGF-IEa. MGF and the other IGF isoforms have the same 5' exons that encode the IGF-I ligand-binding domain. Processing of pro-peptide yields a mature peptide that is involved in upregulating protein synthesis. However, there is evidence that the carboxy-terminal of the MGF peptide also acts as a separate growth factor. This stimulates division of mononucleated myoblasts or satellite (stem) cells, thereby increasing the number available for local repair

During the early stage of skeletal muscle development, myoblasts (muscle stem cells) fuse to form syncytial myotubes, which become innervated and develop into muscle fibres. Thereafter, mitotic proliferation of nuclei within the muscle fibres ceases. However, during postnatal (after development) growth, additional nuclei are provided by satellite cells (myoblast) fusing with myotubules. Muscle damage-recovery seems to have a similar cellular mechanism, in that satellite cells become activated and fuse with the damaged muscle fibres (reviewed by Goldring *et al.* 2002). This is also pertinent to certain diseases such as muscular dystrophy in which muscle tissue is not maintained and which have been associated with a deficiency in active satellite (stem) cells (Megeney *et al.* 1996; Seale & Rudnicki, 2000) and in myogenic factors (Heslop *et al.* 2000). Skeletal muscle mass and regenerative capacity have also been shown to decline with age (Sadeh, 1988; Carlson *et al.* 2001). The reduced capacity to regenerate in older muscle seems to be due to the decreased ability to activate satellite cell proliferation (Chakravarthy *et al.* 2000). The markedly lower expression of MGF in older rat muscles (Owino *et al.* 2001) and human muscle (Hameed *et al.* 2003) in response to mechanical overload has been associated with the failure to activate satellite cells, leading to age-related muscle loss (Owino *et al.* 2001). Your muscle cels can not grow once they have reached a certain size unless they obtain more nuclei from the myoblast. MGF increases the myblast available to donate their nuclei to the adult muscle cell.

“MGF appears to have a dual action in that, like the other IGF-I isoforms, it upregulates protein synthesis as well as activating satellite cells. However, the latter role of MGF is probably more important as most of the mature IGF-I will be derived from IGF-IEa during the second phase of repair. Nevertheless, it has been shown that MGF is a potent inducer of muscle hypertrophy in experiments in which the cDNA of MGF was inserted into a plasmid vector and introduced by intramuscular injection. This resulted in a 20 %

increase in the weight of the injected muscle within 2 weeks, and the analyses showed that this was due to an increase in the size of the muscle fibres (Goldspink, 2001). Similar experiments by other groups have also been carried out using a viral construct containing the liver type of IGF-I, which resulted in a 25 % increase in muscle mass, but this took over 4 months to develop (Musaro *et al.* 2001). Hence, the dual role MGF plays in inducing satellite cell activation as well as protein synthesis suggests it is much more potent than the liver type or IGF-IEa for inducing rapid hypertrophy."

These results are based on actual transplantation of the DNA coding for the peptides. This is a permanent effect and much more potent than IM injections of the peptide itself. You will not see a 20% increase in muscle mass through IM injections as claimed above.

When comparing systemic IGF to IGF gene insertion the systemic injection took approximately 21 days to achieve the amount of repair the gene insertion accomplished in 14 days. This is just an example of the difference b/t gene doping and systemic administration. These results may not be accurate for MGF, but it gives us an idea.

WHY PEGYLATED MGF IS BETTER

MGF exhibits local effects in skeletal muscle and without modification is not systemic (can't travel through the body). The problem with synthetic MGF is that it is introduced IM and is water based so it goes into the blood stream. MGF is not stable in the blood stream for more than a matter of minutes. Biologically produced MGF is made locally and does not enter the bloodstream and is short acting so stability is not an issue. By PEGylating the MGF we can make synthetic MGF injected IM almost as efficient as local produced MGF. Clinically proven Advanced Pegylation, the technology of polyethylene glycol (PEG) conjugation, holds significant promise in maintaining effective plasma concentrations of systemically administered drugs. It does this by surrounding part of the peptide with a unique structure made of polyethylene glycol, which can be attached to a protein molecule. The result of a correct PEGylation is simlar to the protective mechanism of a turtle shell. The polyethylene glycol groups protect the peptide but don't surround it completely. The active sites of the peptide are still free to do their biological function. In this case the shell is a negative charged shield against positively charged compounds that would affect the protein. This also provides a nice steric chamber for the peptide to reside in. So it's a happy turtle ;)

Neurological research has shown that utilizing PEGylated MGF resulted in a longer more stable acting version of the MGF peptide in serum/blood.

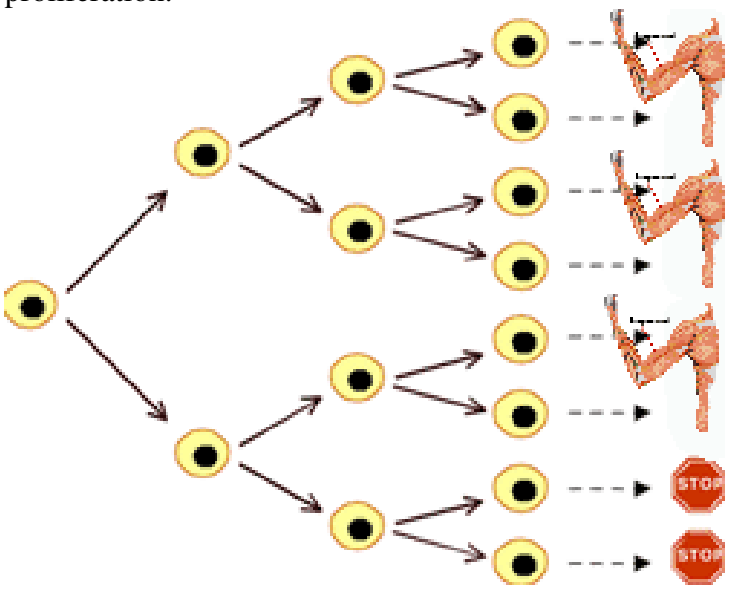
Bottom line
PEGylation can improve performance and dosing convenience of peptides, proteins, antibodies, oligonucleotides and many small molecules by optimizing pharmacokinetics, increasing bioavailability, and decreasing immunogenicity and dosing frequency. **PEGylation** also can increase therapeutic efficacy by enabling increased drug concentration, improved biodistribution, and longer dwell time at the site of action. As a result, therapeutic drug concentrations can be achieved with less frequent dosing—a significant benefit to patients who are taking injected drugs.

The PEG itself does not react in the body and is very safe. PEG has been approved by the US Food and Drug Administration (FDA) as a base or vehicle for use in foods and cosmetics and in injectable, topical, rectal and nasal pharmaceutical formulations. PEG has demonstrated little toxicity, is eliminated intact by the kidneys or in the feces and lacks immunogenicity. The risk associated with current PEGylated drugs are due to the way the drug itself acts not the PEG. MGF, as it is being currently sold, is getting a bad rep from people due to the fact they feel that they are not seeing gains from it. Many

people believe that the use of MGF in their cycles or protocols just flat out won't work, however, this is far from the truth.

Here it is plain and simple for you. Without any complex peptide understanding required other than the fact that PEGylation increases the stability, and lifetime of the peptide.

MGF is responsible for increasing muscle stem cell count through a process called proliferation.



As you see the effect going left to right here is exponential. The more stem cells you have the more that can be stimulated and replicated. In order to signal this replication there has to be sufficient saturation of cell receptors. Because attachment to a receptor is by simple probability, the more peptide and the more time the more probable a cell will reach saturation and begin to replicate.

IF regular MGF has a shorter life span, it has a significantly smaller chance at saturating cells. It is not stable in the blood so its only real chance to bind is right at injection. If you calculate probability of binding via (time x concentration) and then PEG last appx 300 times longer, the probability of MGF having a significant effect is about 300 times at the same dosage. In other words you would need 300 times the regular MGF to bind to as many receptors as the PEGylated version. And even at that case the loss of peptide to the blood so fast would still limit the effects of MGF.

Now you must also consider the cumulative effects of having longer term MGF action. AS you saw in the image, the number of receptors will increase, this increase the probability further for the PEG version so now every time you undergo muscle stem cell replication within the 4-8 days the PEG version is active you increase the probability proportional to the increase in cell number.

So without knowing anything more than multiplication and the law of probability one can see that PEG MGF is significantly more effective.

GETTING THE MOST OUT OF MGF

As you have seen above in the pictures of proliferation there is a final step in which the satellite cell either goes dormant or fuses with the muscle. Your body will never let all the satellite cells fuse otherwise there would be none left to replicate to make future cells to repair. However in the case of MGF we are making a lot more cells than usual. Having more cells just lying around isn't going to help us much unless we can use them. The missing link here is something that will signal these cells to differentiate, and by that I mean change so that they fuse with the adult muscle cells. Resistance exercise is our bodies natural stimulator of these signaling compounds, however when using MGF if you want the most bang for your buck you might need to go beyond your bodies natural ability to signal cells to differentiate.

There are two things on the market that are very good at accomplishing this.

1. IGF-I (insulin like growth factor)
2. Androgens (Androgenic steroids)

By adding one of these compounds with IGF you will get a synergistic effect and see even better results than any of them taken individually. By increasing cell availability and cell fusion you are going to have a synergistic increase in overall new muscle.

When do I take my MGF?

As I said before your natural stimulation for androgens and IGF-I are post exercise. MGF will actually inhibit the effects of these if taken at the same time because cells can not replicate and fuse at the same time. It is for this reason I suggest taking MGF around 24 hours before you workout. This allows time for the MGF to signal replication so that post workout you will have the maximum amount of cells available. If you take IGF with it you should take the IGF post workout. This will add to those benefits. If taking an androgen, you are probably taking a long acting form or taking it every to every other day. Thus there is no need to take the androgen at a special time.

Here are some sample protocols
Once a week PEG MGF/ IGF
Sunday 200-400 mcg MGF you can choose to site inject if you wish. I think splitting large doses may benefit.
Monday –Fri IGF 50mcg e/d or at least 3 times per week

Twice a week PEG MGF / IGF
Sunday and Wed MGF 100-250 mcg

M,T, Th,F IGF 50 mcg

HOW TO RECONSTITUTE

For IGF you use an acetic acid solution. If one was not made available to you you can make the solution using 7 parts distilled water and 1 part vinegar from the grocery store. You must filter this through a sterile syring filter before use however.

For MGF use Bacteriostatic Water BW.

When reconstituting you are going to add the liquid to th vial containing the powder is a slow controled manner with the vial tilted so that the liquid trickles out of the needles and rolls down the side of the vial. Do not squirt it directly into the peptide b/c this may damage it.

How do you know how much to use?
Well you need to know how much is in the vial and how much you wnat your dose to be. I like to make mine so that the dosage comes out to being an even 10IU so its easy to measure accurately.

You will need insulin syringes with IU (internatioal units) measurements.
and IU is 1/100 of a mL or a 100,000 of a Liter. This is a measurement of volume.

Your peptide will be labeled in mcg. (micrograms) which is 1/1000 of a mg or 1 millionth of a gram.

Your vial will likely have either 1 or 2 mg of peptide inside that's 1000-2000 mcg.

Say you have a 1mg vial and you add 1ML you get
1000mcg/1mL: 10 mcg per IU
and so on if you add more.
1000mcg/2mL: 5.0 mcg per IU
1000mcg/3mL: 3.3 mcg per IU
1000mcg/4mL: 2.5 mcg per IU

if you have a 2mg vial simply multiply these number by 2
2000mcg/1mL: 20 mcg per IU

Now you are not going to be able to accurately measure 1 IU. I'd say 5 IU is the smallest measurement I would reccomend and 10IU is even easier to measure. So lets

look at these dilutions for 5 and 10 IUs
1000mcg/1mL: 100 mcg per 10IU
and so on if you add more.
1000mcg/2mL: 50 mcg per 10IU
1000mcg/3mL: 33.3 mcg per 10IU
1000mcg/4mL: 25 mcg per 10IU

Or
1000mcg/1mL: 50 mcg per IU
and so on if you add more.
1000mcg/2mL: 25 mcg per IU
1000mcg/3mL: 16.6 mcg per IU
1000mcg/4mL: 12.5 mcg per IU

Once again if you are using a 2mg vial just multiply these numbers by 2.

Here is a equation to check yourself.
Amount mcg / volume in mL /100 = mcg/IU

WHERE TO INJECT

For the best results IMO MGF in either PEG or Non should be done intramuscular in the muscle to be worked the following 24 hours. However this is going to be limited to muscles that are not covered by a thick layer of skin and fat so that the muscle can be reached.

WHERE TO GET MGF

The best and only Pegylated MGF on the market is available at www.Inovative-Research.net or you can click the banner below.
Please support my research and call 1-866-423-6351 and tell them TheGame46 sent you.
You can order right over the phone or call with your order info after ordering online.
Thank You!

LINKS TO LOGS

http://www.ibeforums.com/portal/forums/forumdisplay.php?f=22
http://www.professionalmuscle.com/forums/showthread.php?t=19314

Get Your PEG MGF HERE, Please call **1-866-423-6351** and say the TheGame46 sent u!