

# BioCeuticals Research & Development Analytical Laboratory

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**Date:** March 8<sup>th</sup>, 2003  
**Study:** Rat Study with Kre-Alkalyn US Patent 6,39,661 (**Buffered Creatine**)

**Purpose of Study:** To measure Energy Levels & Muscle Gain in rats, with test and control animals

## Procedures:

White male albino rats were used for this study. A control group was used along with a test group. Upon arrival to the lab both groups entered Phase I, stabilization. Stabilization started with changing their diet to a more conventional food source. Good Protein and Carb levels, low fat. Each rat was weighed at the start and each Monday for six weeks. Rats were randomly selected for test group and control group.

Rats were observed for energy levels daily. Energy levels were measured by amount of chewing, maze work & cage activity that occurred.

Rats were placed in a large 10 gallon glass cages that allowed movement and building of nests. Chew items were also put in the cages to help measure night activity.

Kre-Alkalyn Administration: Based on human studies, 1.5 grams per 100 kg of body weight was used. This worked out to 15 mcg/gram of rat starting weight.

### The Start:

Both rats weighed in at 250 grams. Activity and Energy levels were extremely low. Neither rat would work a maze. During stabilization, both control rat and test rat sleep during the day, with very low night activity.

## Results:

Animal	Weight in grams	Week Gain	Total Gain	% Gained	
Control	250.00	Starting Weight			
Week 1	259.20	9.20	9.20		3.68
Week 2	285.80	26.60	35.80		14.32
Week 3	317.80	32.00	67.80		27.12
Week 4	344.80	27.80	95.60		37.92
Week 5	359.80	15.00	110.60		43.92
Week 6	382.80	23.00	<b>133.60</b>	Total	<b>53.12</b>
				Total	Total

Test 250.00 Starting

		Weight				
Week 1	262.80	12.80	12.80		5.12	
Week 2	280.80	18.00	30.80		12.24	
Week 3	309.80	29.60	60.40		23.92	
Week 4	358.56	48.76	109.16		43.42	
Week 5	381.00	22.44	131.60		52.40	
Week 6	407.80	26.80	<b>158.40</b>	Total	<b>63.12</b>	Total

**Control Rat Weight Gain:** Although the control rat gain 133.6 grams, he was very round and soft.

**Test Rat Weight Gain:** Kre-Alkalyn Rat gained 158.4 grams or 63.12 % increase in lean muscle in 6 weeks. He gained 10% more than control rat. Test rat was solid with no roundness or flabbiness like the control rat.

**Control Rat Energy:** Control rat was not active at all during the day. He slept in his nest. The nest was a mess and un-organized. Chew toys were not touched. Rat did not even come out for feeding. The only evidence of night activity was food eaten. Control rat had no energy or motivation to work a maze.

**Test Rat Energy** Control rat was out of his nest each morning and most of the time during the day. His next was clean and very organized. Control rat went through 3 chew toys during the 6 week testing, along with chewing at the top of the cage which was only accessible when water bottle was climbed, which he did often during the day. Test rat was extremely motivated and energized to work a maze. His energy levels were extremely high for a rat.

**Conclusion:** Not only did the Test rat gain 63.12% lean muscle, but his energy levels was increased 100% over the control rat and 100% from the stabilization week.

**Kre-Alkalyn (Buffered Creatine) increased lean muscle mass by 63.12% after 6 weeks, and energy levels were increases 100%..**