



**OSTEOGENIC EFFECT OF RESVERATROL
AND QUERCETIN TO 10-DAY OLD**

Anas luzonica (DUCK) EMBRYO

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MARK ALLYN GANANCIAS

LYLE SANTAMARIA

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ABSTRACT

This study aimed to determine the effect of quercetin and resveratrol to the osteogenic process in duck embryos. Both compounds were known to be antioxidants and were tested to its potential in aiding bone growth. Prior to administration, the duck eggs were incubated for 10 days. Prepared solutions for the treatments were dissolved in 2% DMSO as a solvent. Before administration of compounds, an antibiotic was given to the 10-day old duck eggs. The compounds were then administered as 100% resveratrol(T1), 100% quercetin(T2), 50% resveratrol:50% quercetin (T3), 25% resveratrol:75% quercetin (T4), 75% resveratrol:25% quercetin (T5). The eggs were incubated for 18 days. The duck embryos were skinned and stained with alizarin red and KOH solution. By stereomicroscope, the length of long bones (humerus, radius, ulna, tibia, fibula, and femur) were measured using a Vernier caliper (mm) to determine the effects on the duck embryo's osteogenesis. Bone measurements were statistically analyzed by One way Anova and Scheffe's test method at 5% probability level. Among the treatments, T1 is the most effective in lengthening the long bones, followed by T4, and T3. On the other hand, T2 and T5 yield a negative effect ($p>0.05$) from the control group (T0). However, the combination of quercetin and resveratrol yield positive effects in terms of length of the long bone ($p<0.05$). Also, increased concentration of resveratrol in the in combination with quercetin yielded longer length of long bones. The findings suggest that Resveratrol potentiates the effects of quercetin on bone lengthening.

Key words: Antioxidants, osteogenic process, antibiotic, 2%DMSO, potentiality, duck embryos, long bones.