ABSTRACT

Objective: To identify the expressions of SOX9 and type II collagen in spheno-occipital synchondrosis in response to quercetin, using a mouse in vitro model.

Materials and Methods: A total of 50 one-day-old male BALB/c mice were randomly assigned to the control and experimental groups. Each group was subdivided into five different time points, which were 6, 24, 48, 72, and 168 hours, and each subgroup contained 5 mice ($n = 5$). In the experimental group, the spheno-occipital synchondrosis was immersed in the BGJb medium + quercetin dihydrate 1 μM. In the control group, the spheno-occipital synchondrosis was immersed in the BGJb medium. Tissue sections were subjected to immunohistochemical staining for SOX9 and type II collagen expressions.

Results: Quantitative analysis revealed there was a statistically significant increase of 32.31% ($P < .001$) in the expression of SOX9 between experimental groups and control groups at 24 hours. Furthermore, there was a statistically significant increase of 22.99% ($P < .001$) in the expression of type II collagen between experimental groups and control groups at 72 hours.

Conclusion: The expressions of SOX9 and type II collagen in the spheno-occipital synchondrosis can be increased by quercetin. (*Angle Orthod.* 2012;82:247–253.)

KEY WORDS: Quercetin; Synchondrosis