**Supporting Information for**

**The *in vitro* Effects of Nutraceutical-Treatment on Human Osteoarthritic Chondrocytes of Females of Different Age and Weight Groups**

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**Running head title:** Nutraceuticals and osteoarthritis

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This work was supported in part by an NSF GOALI Grant CBET-1606226.

**Conflict of Interest:** All authors declareno conflict of interest

No reprints are requested

**S1. Differences in the weight of the two groups investigated**

Figure S1 shows the difference in weight between group 1 and group 2. Group 1: age 50 – 69 years, average age: 63 years, average weight: 100 kg, average body mass index (BMI) 34.06 kg/m2, n=13. Group 2: age: 70 – 80 years, average age: 76 years, average weight: 75 kg, average BMI 31.43 kg/m2, n=3. The average weight of group 1 was significantly more than group 2 (P < 0.05), statistical differences were tested using unpaired t-test.

A screenshot of a cell phone

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**Figure S1.** Weights of group 1 and group 2 (Mean ± SEM) (group 1, n=13; group 2, n=3), \* P<0.05.

**S2. Viability of cells as a function of nutraceutical treatment**

Chondrocytes derived from both groups were viable at day 21 of culture with no significant differences in viability between treatment groups or between age groups.

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**Figure S2.** Viability of cultured chondrocytes at day 21 for both groups as a function of nutraceutical treatments. (Mean ± SEM) (n = 3). No statistical differences among age groups or nutraceutical treatments were observed.

**S3. A representative image of glycosaminoglycan (GAG) staining with scale bar on it**

A view of a mountain

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**Figure S3**. Toluidine Blue GAG staining of NC of group 2 with the scale bar shown.

**S4. Variations in the gene expression of key chondrogenic, osteogenic and inflammatory markers as a function of weight and nutraceutical treatment**

**Table S1.** A summary of how gene expression of key chondrogenic, osteogenic and inflammatory markers differed from the negative control as a function of nutraceutical treatment for both groups. Light gray represents a ratio above 1 while dark gray represents a ratio below 1.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Nutraceutical**  **/Gene** | **COL2A1** | **COL10A1** | **ACAN** |  | **BMP-2** | **FOXO1** | **SOX-9** |  | **NOS2** | **MMP13** | **TNFIAP6** |
| **C group 1** |  |  |  |  |  |  |  |  |  |  |  |
| **C group 2** |  |  |  |  |  |  |  |  |  |  |  |
| **G group 1** |  |  |  |  |  |  |  |  |  |  |  |
| **G group 2** |  |  |  |  |  |  |  |  |  |  |  |
| **Alpha group 1** |  |  |  |  |  |  |  |  |  |  |  |
| **Alpha group 2** |  |  |  |  |  |  |  |  |  |  |  |
| **AA group 1** |  |  |  |  |  |  |  |  |  |  |  |
| **AA group 2** |  |  |  |  |  |  |  |  |  |  |  |