ods and characterization of chemical changes during degradation periods were investigated by spectroscopic methods. Various ratios of starch, fibroin and chitosan (%, (weight/weight)) were prepared. The *in vitro* cell culture studies were conducted to evaluate biocompatibility and proliferation capacities of conjugate materials. The DNA content of cells at certain time points of cell culture was measured for their proliferation potentials. The cell morphologies such as cell area and maximum cell length were measured over a large cell population. The spectrum traces suggest that the weight loss was primarily from starch degradation by α-amylase. The absorption bands after protease degradation showed no significant changes and this result can indicate that the enzyme activity was impaired or inhibited by extensive crosslinking between oxidized starch and fibroin or chitosan (a natural substrate of protease) biopolymers. The DNA quantities of conjugate materials after cell culture were increased linearly with higher fibroin ratios. This result proves that fibroin incorporation into chitosan and starch matrix is improving adsorption and proliferation properties of conjugate materials. The unique cell features were detected for each type of conjugate material. In general, the cells on pure fibroin and chitosan had a higher cell area than conjugates. Higher fibroin content steadily increased the cell area and cell length.

(P 99) Conjugation of Fibroin and Starch to Chitosan for Increasing Cell Proliferation Capacity

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In this study, chitosan conjugates with starch and fibroin were produced for increasing degradability in the presence of physiological enzymes and cell proliferation capacities of biomaterials. The degradation profile was monitored over prolonged time peri-