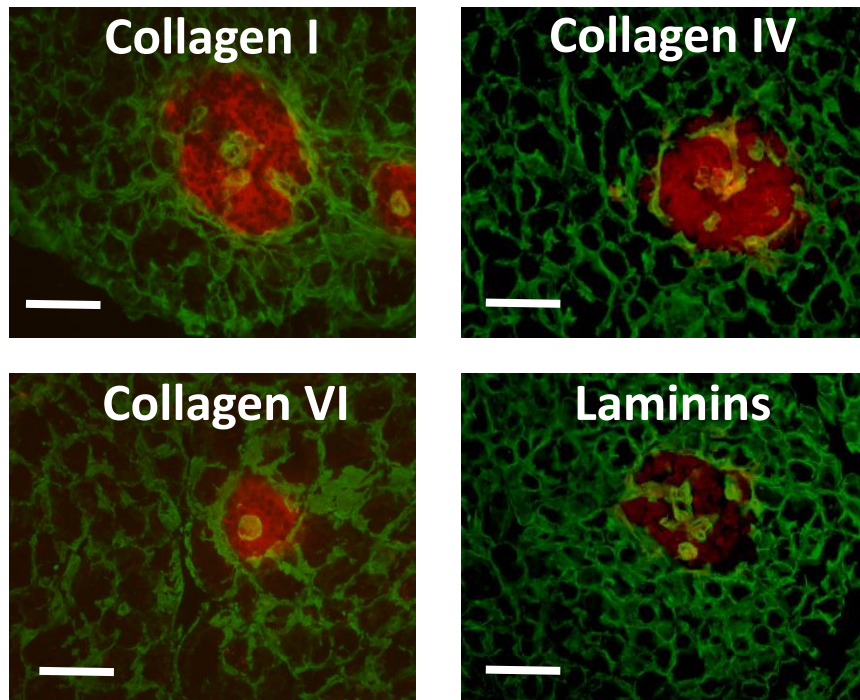


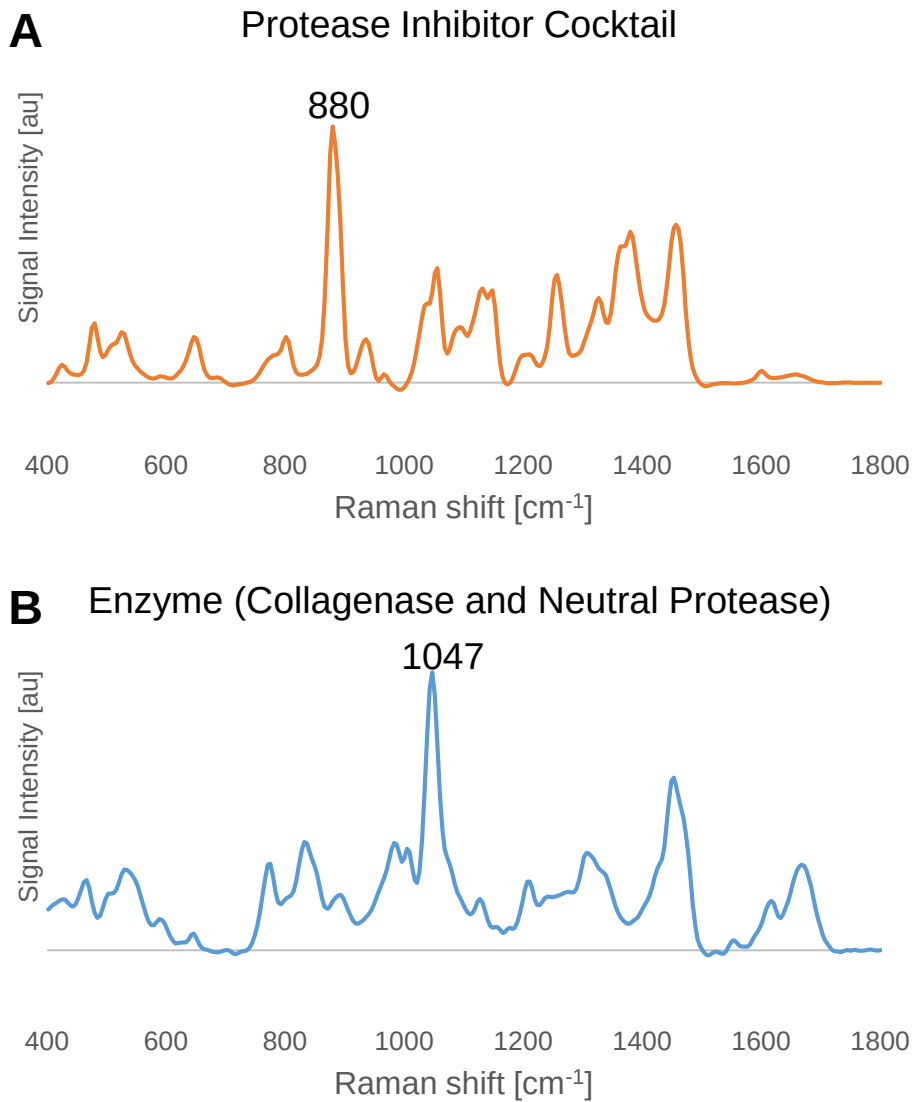


Supplementary Figure 1: Distribution of collagen I, IV, VI and laminins in the human pancreas

Immunofluorescent labelling was used to identify islets (insulin labelling; shown in red) and ECM proteins (as indicated; shown in green). Collagen IV tissue was stained as per the protocol described in the methods (*section 2.3*). The images are taken from native tissue (i.e. the tissues were not treated with enzymes). This protocol was also followed for the detection of collagens I, VI and laminins. The following antibodies were used: collagen I (1:300; ab34710, Abcam), collagen VI (1:300; ab6588, Abcam) and laminins (1:500; AHP420, Biorad), all raised in rabbit. Secondary antibodies were: goat-anti guinea pig Texas red (1:100; TI-7000, Vector laboratories) and goat anti-rabbit A488 (1:500; A-110088, Life Technologies). Images were taken on a Axioskop 40 microscope and Zen Works software (Carl Zeiss, Jena, Germany).

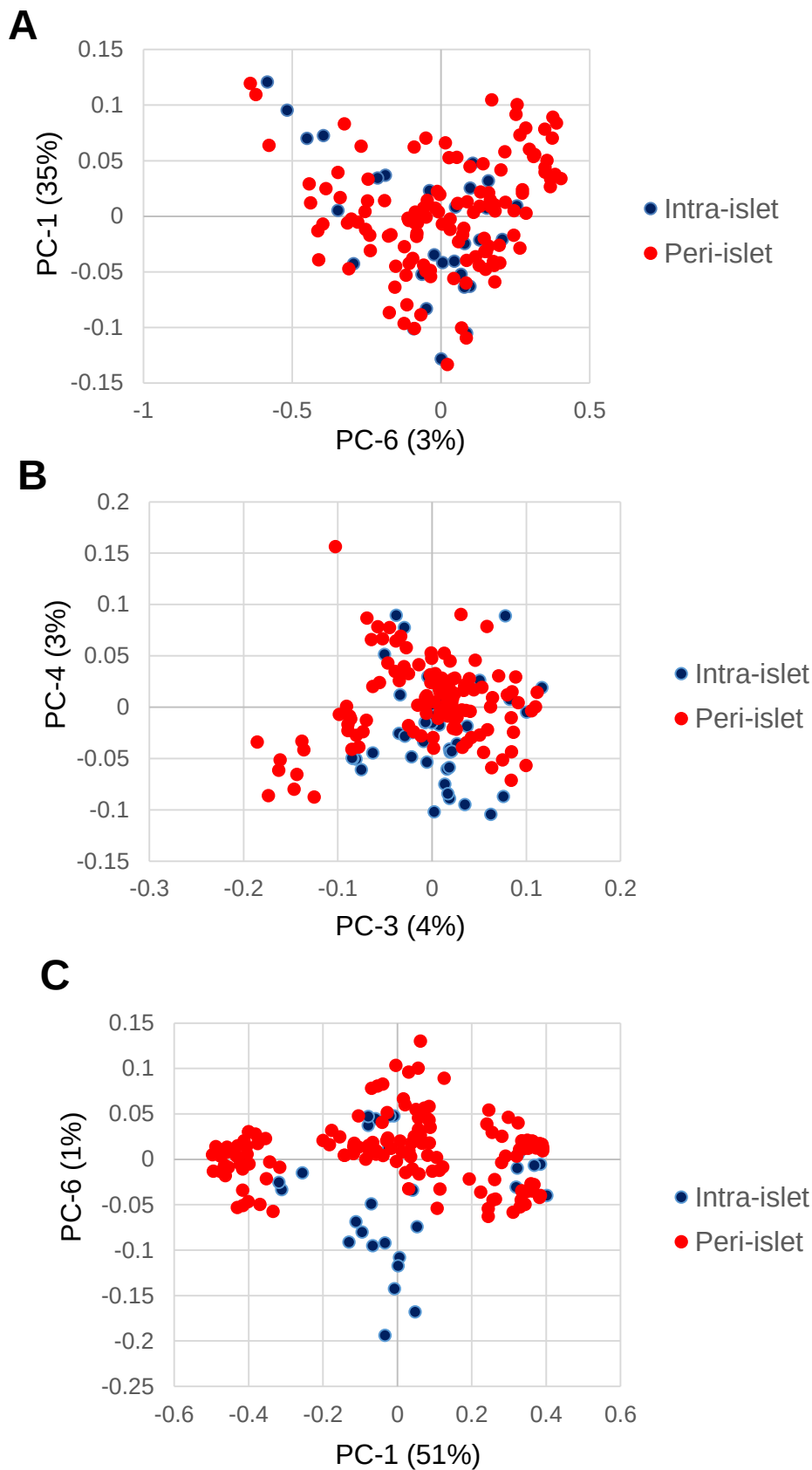
Images are representative of staining performed on 6 donors and show that the 4 ECM proteins are located diffusely throughout the exocrine pancreas, as well as being present at the islet-exocrine interface.

Scale bars 100µm.



Supplementary Figure 2: Raman spectra for additives used in purified matrix digest experiments

(A) Protease inhibitor cocktail and **(B)** collagenase and neutral protease
Major peaks identified at 880cm^{-1} (A) and 1047cm^{-1} (B) were disregarded for the purpose of the matrix digestion analysis



Supplementary Figure 3: PCA of Raman spectra obtained from the intra and peri-islet ECM
(A) Collagenase treated tissue **(B)** neutral protease treated tissue **(C)** collagenase and neutral protease treated tissue. For all enzyme treatments ECM location did not influence ECM digestion. This led to the measurements from the two locations being combined.
 Intra-islet; Islet interior
 Peri-islet; Islet peripheral
 PCA; Principle component analysis
 PC; Principle component