

Enzyme Selection for Islet Isolation: Experiences in Three Different Species

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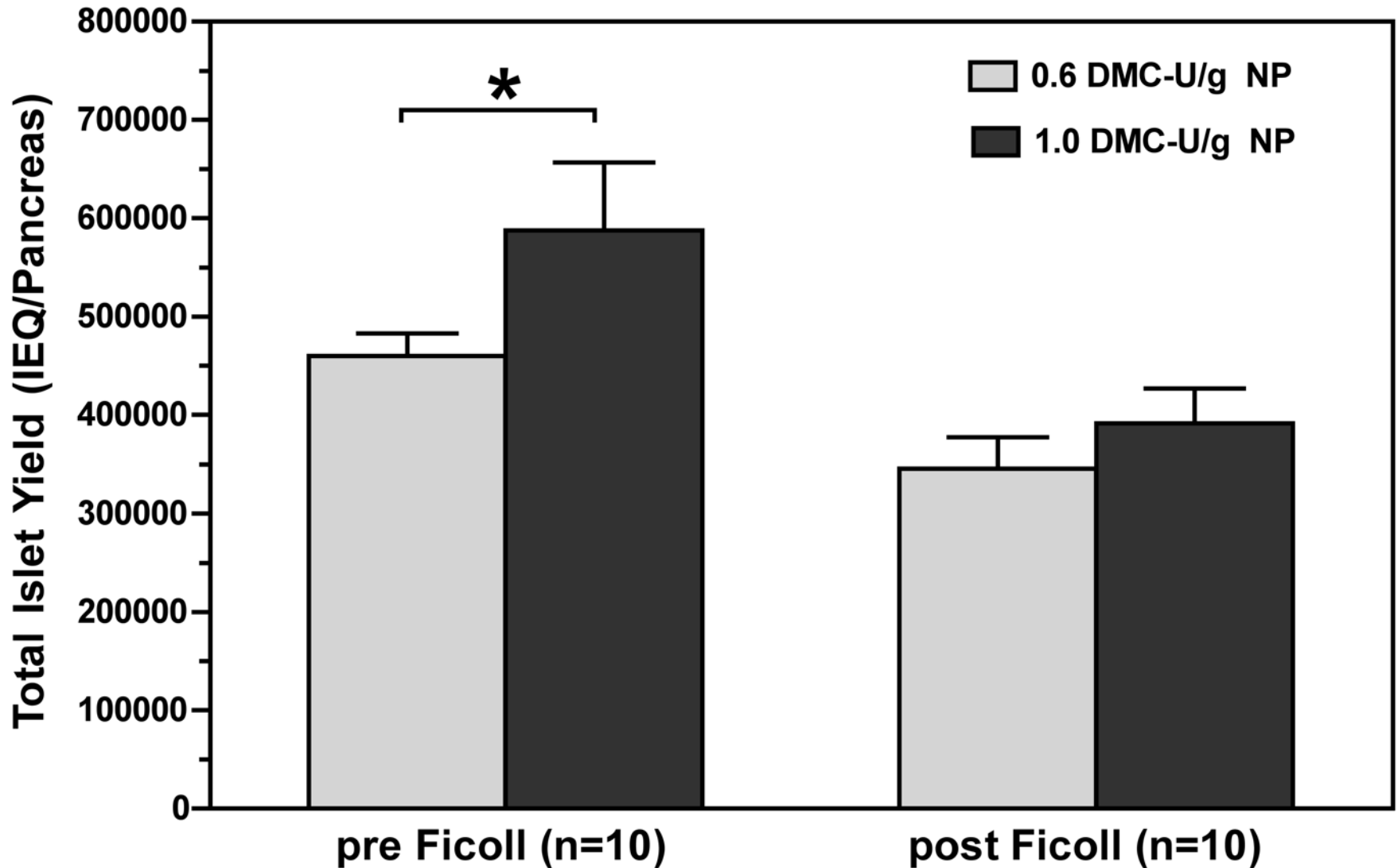
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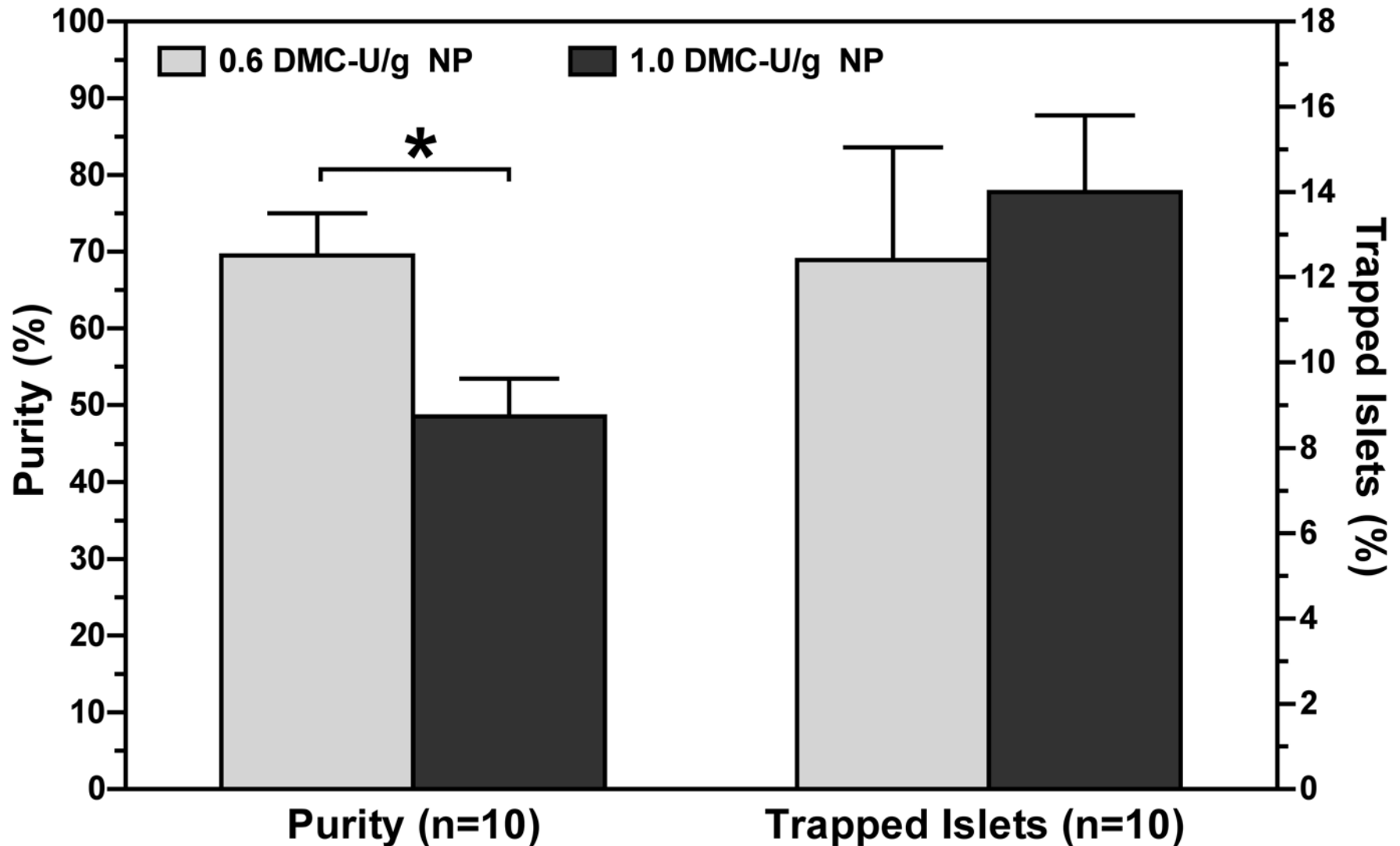
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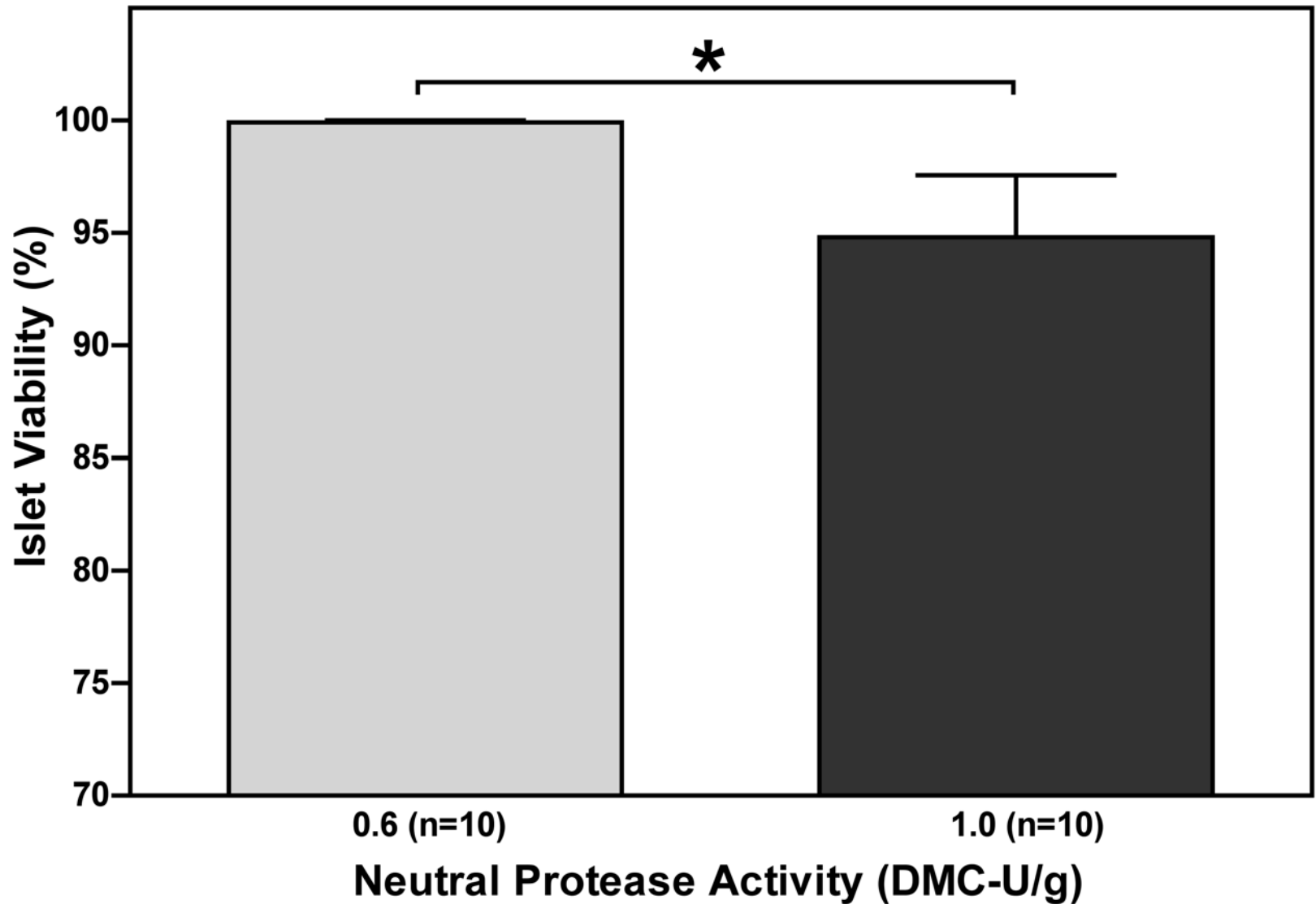
Effect of Neutral Protease Concentration on Human Islet Yield



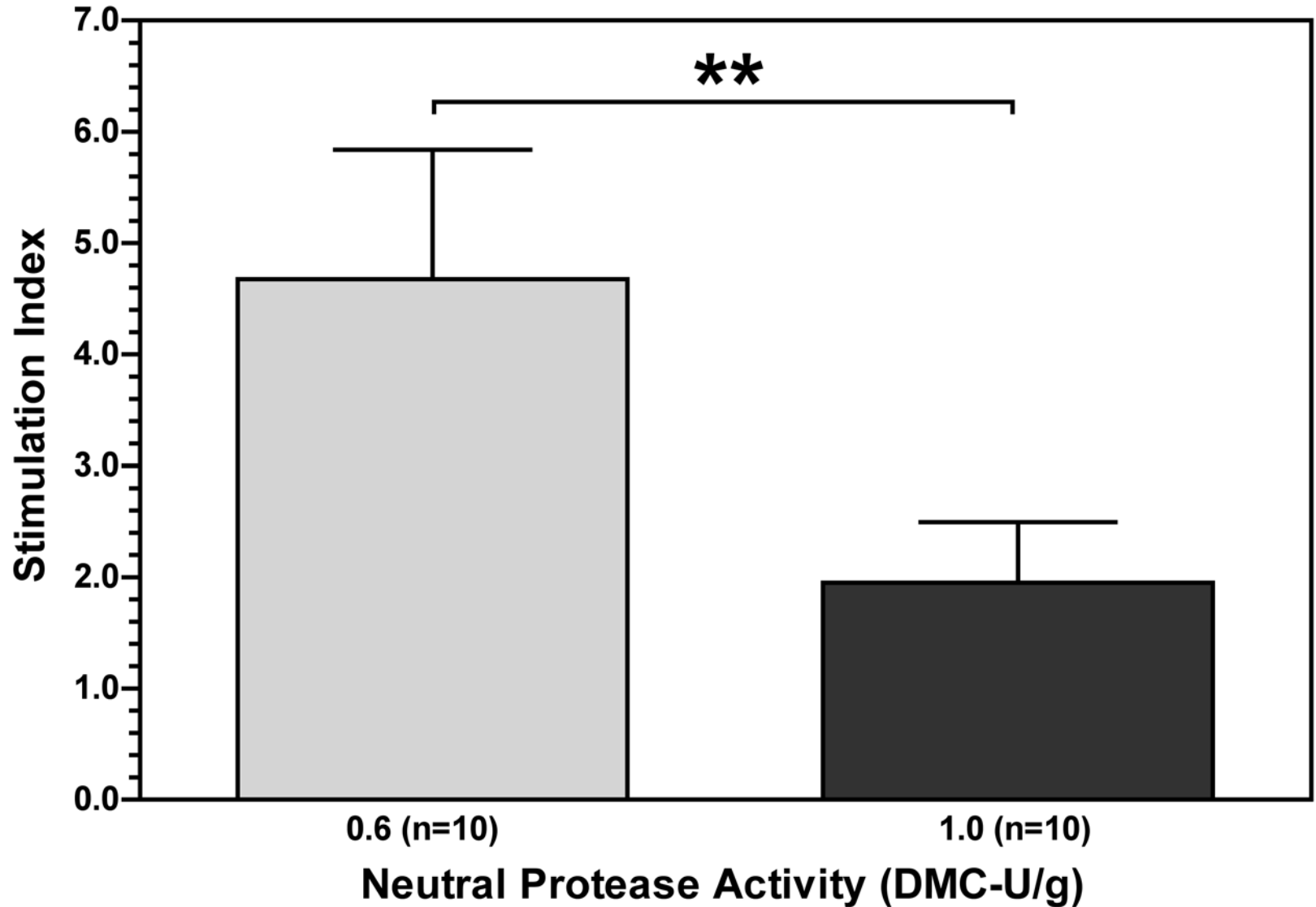
Effect of Neutral Protease Concentration on Human Islet Purity



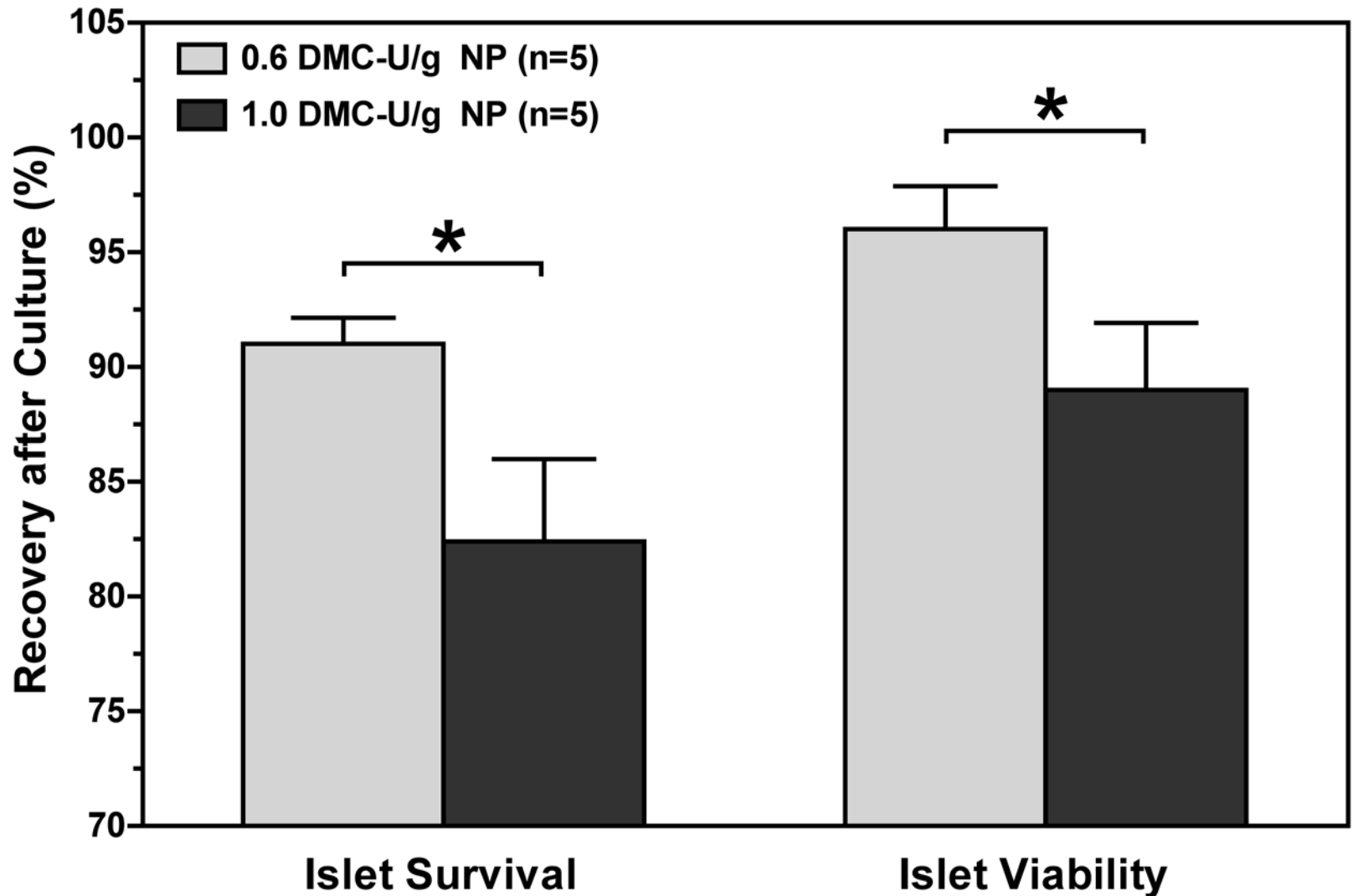
Influence of Neutral Protease Concentration on Human Islet Viability



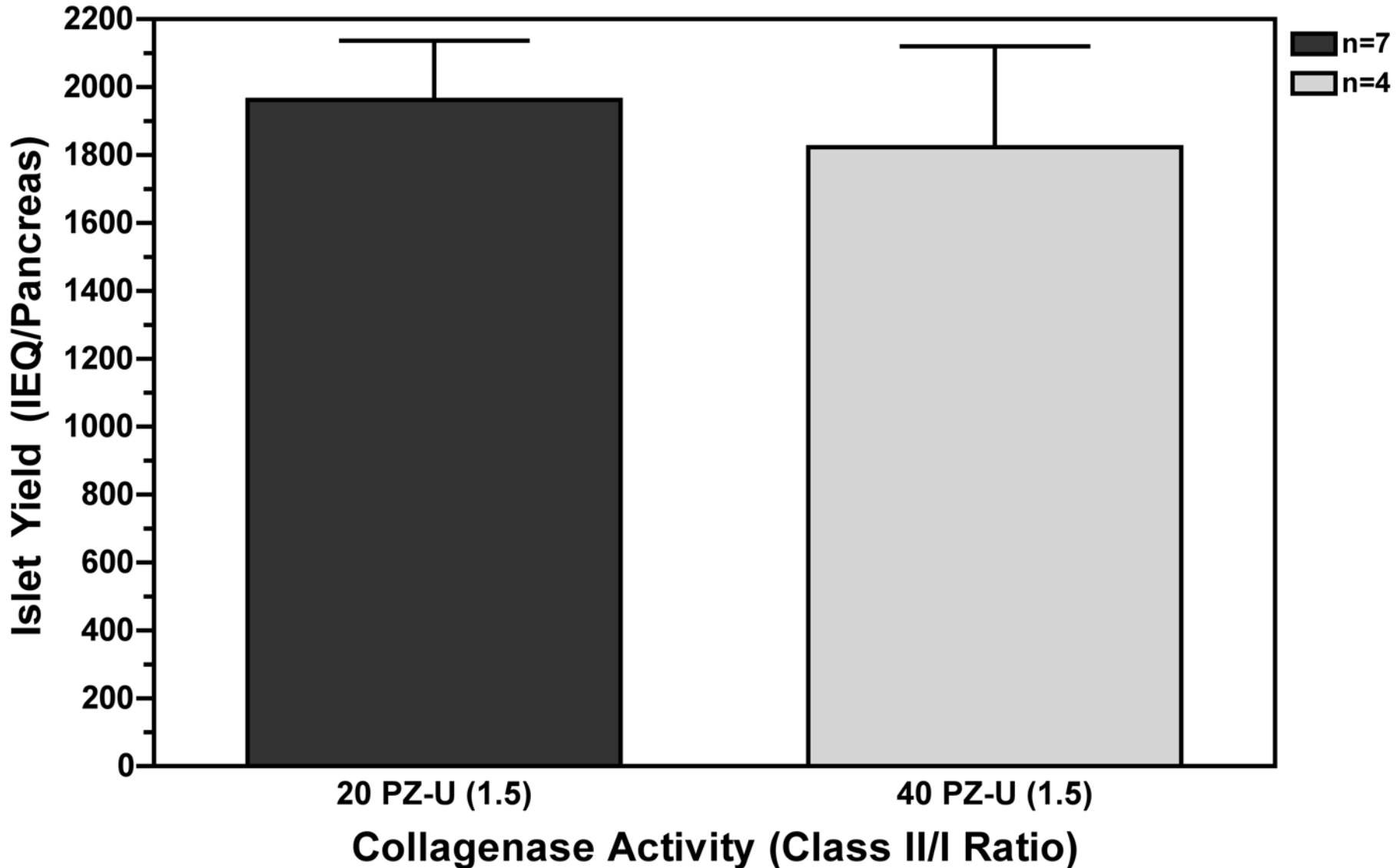
Effect of Neutral Protease Concentration on Human Islet In Vitro Function



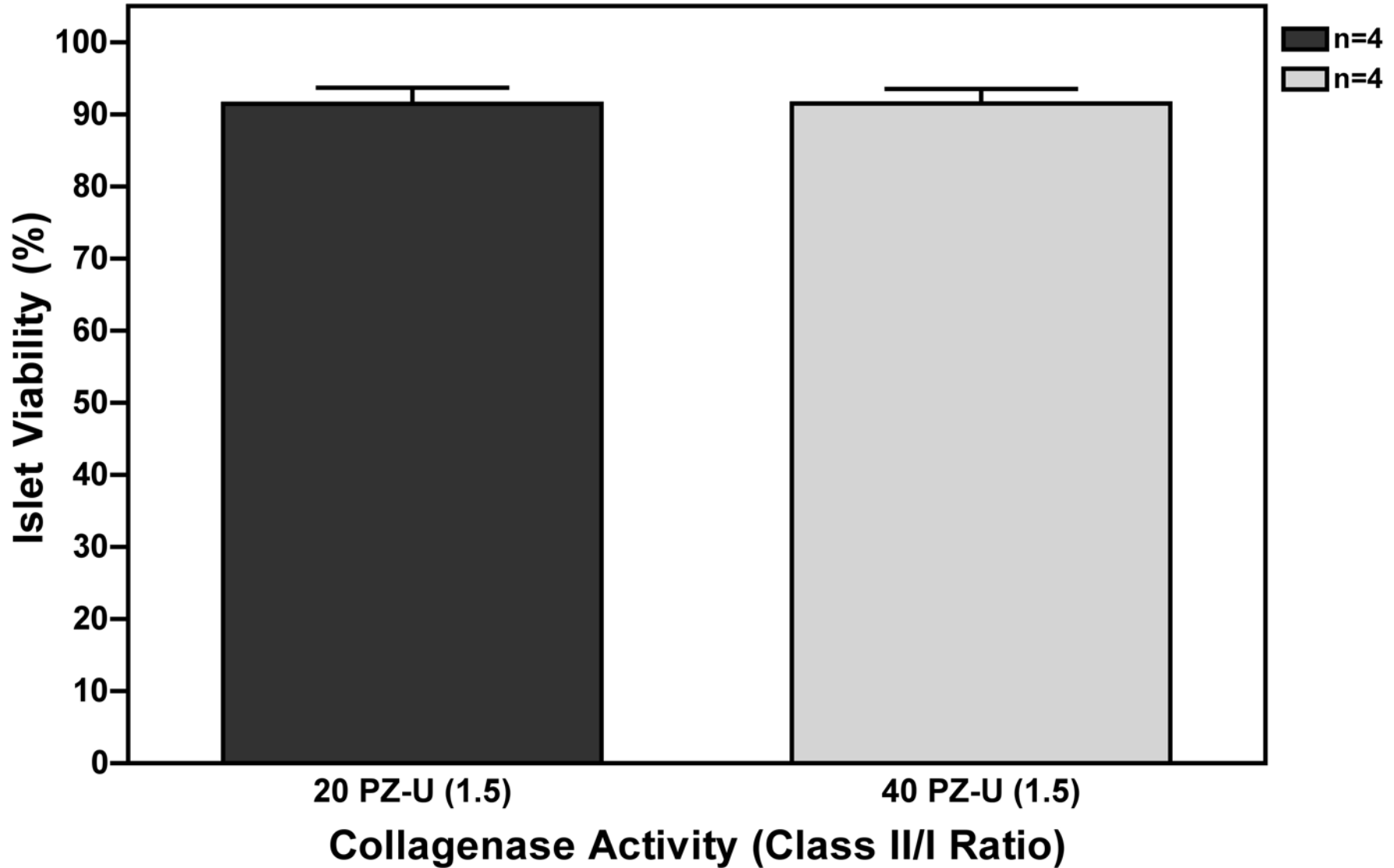
Influence of Neutral Protease Activity on Islet Recovery after 3 day-Culture



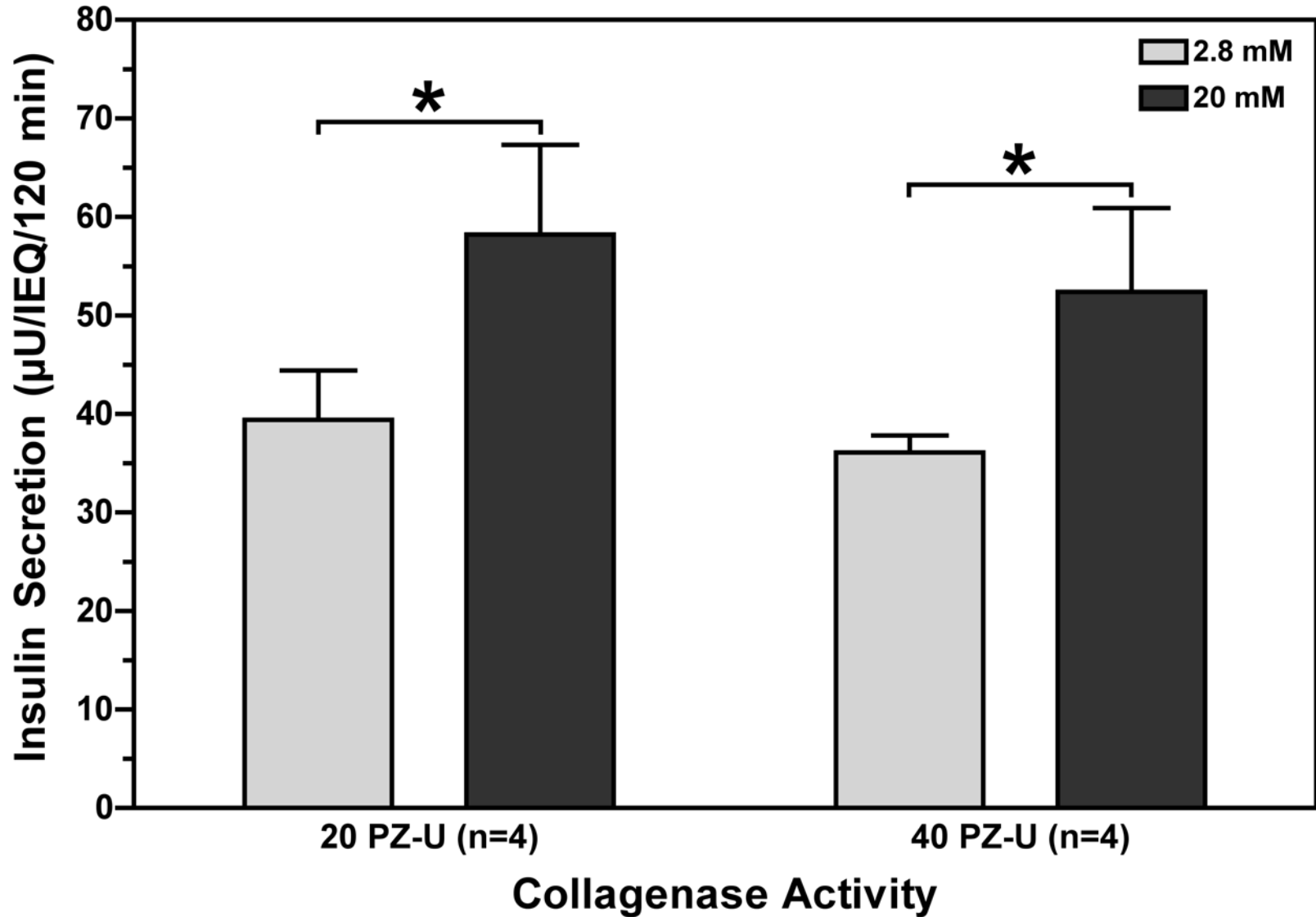
Influence of Collagenase Activity on Rat Islet Yield



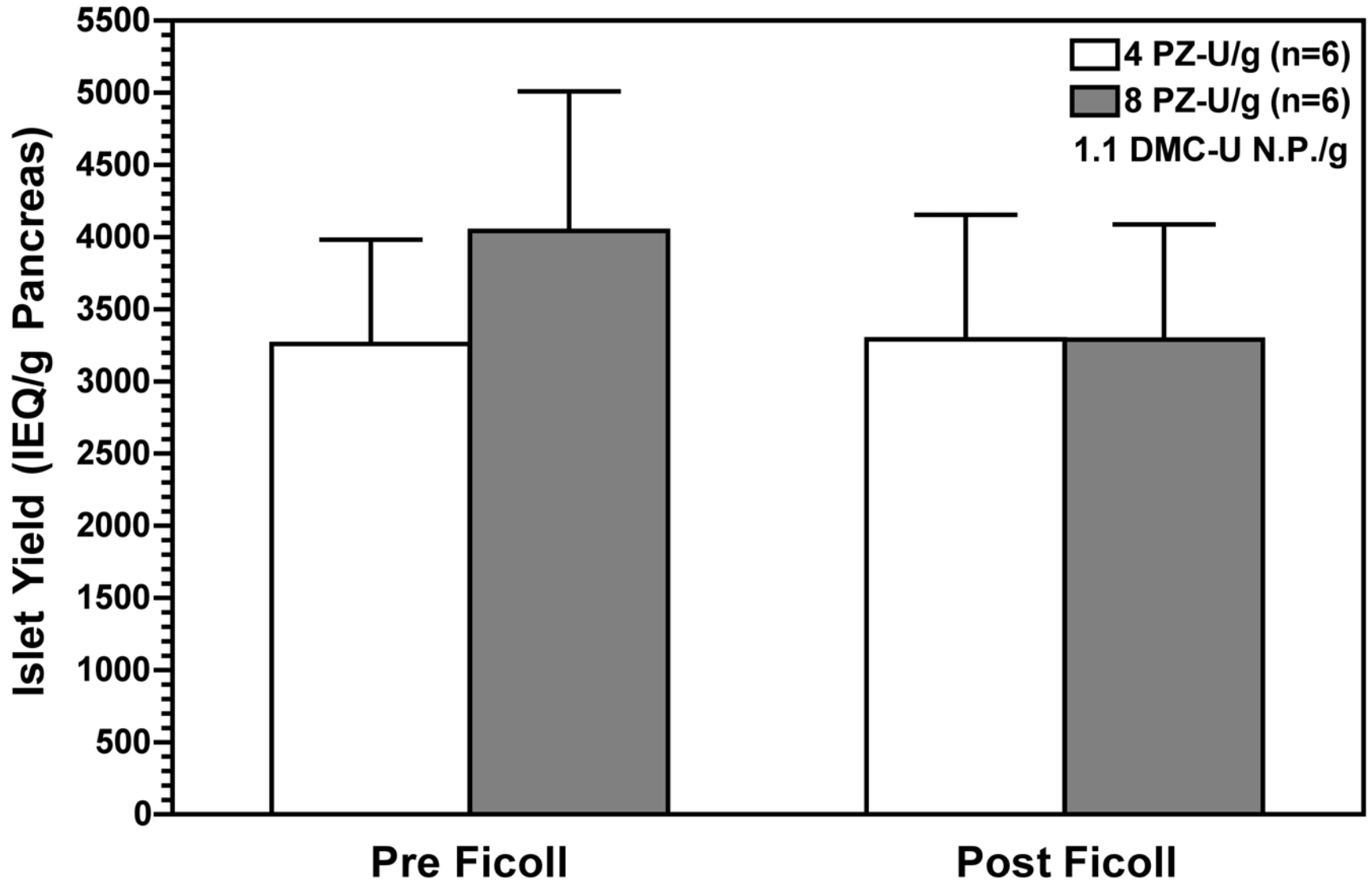
Influence of Collagenase Activity on Viability of Rat Islets



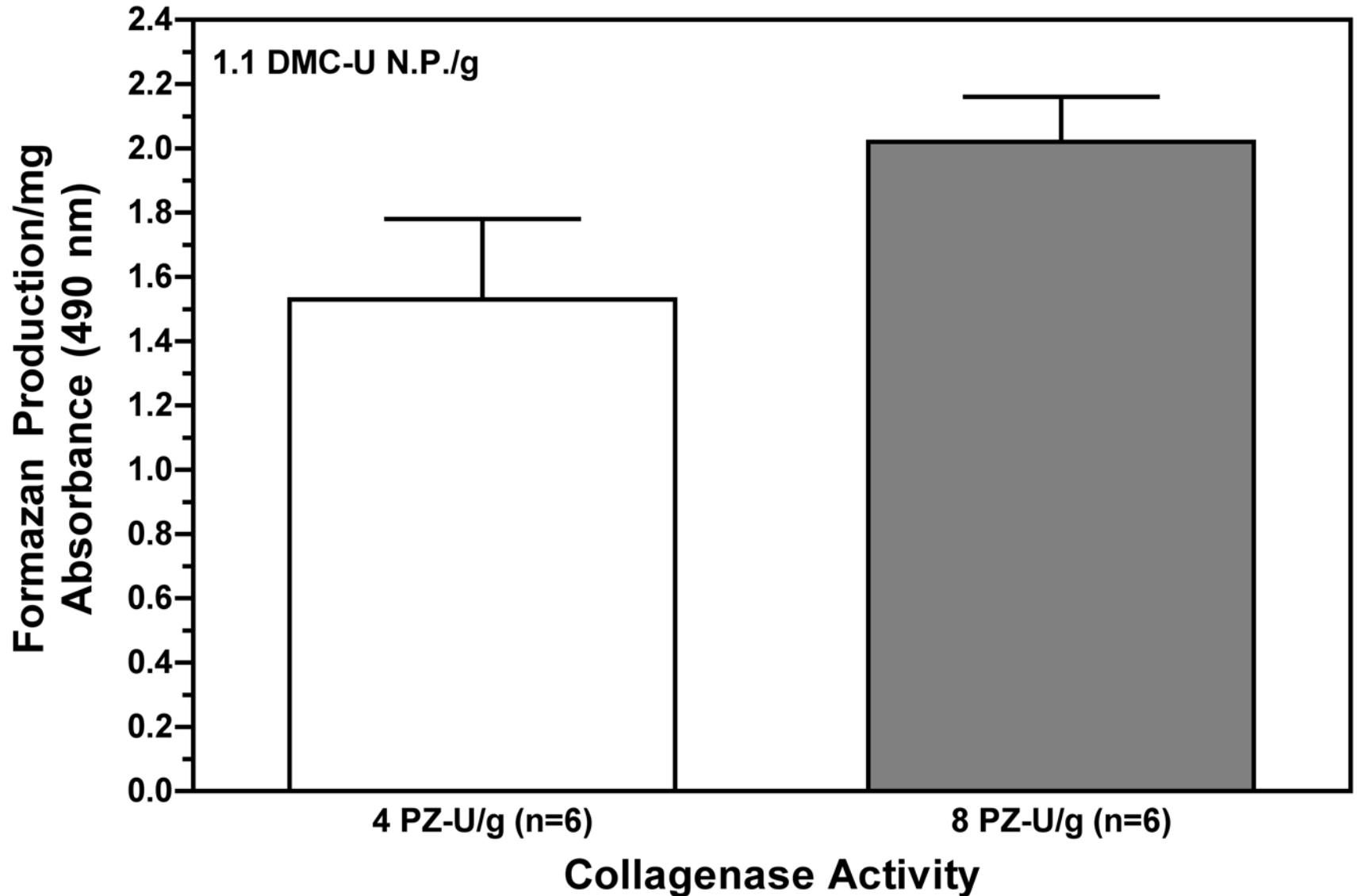
Influence of Collagenase Activity on Rat Islet In Vitro Function



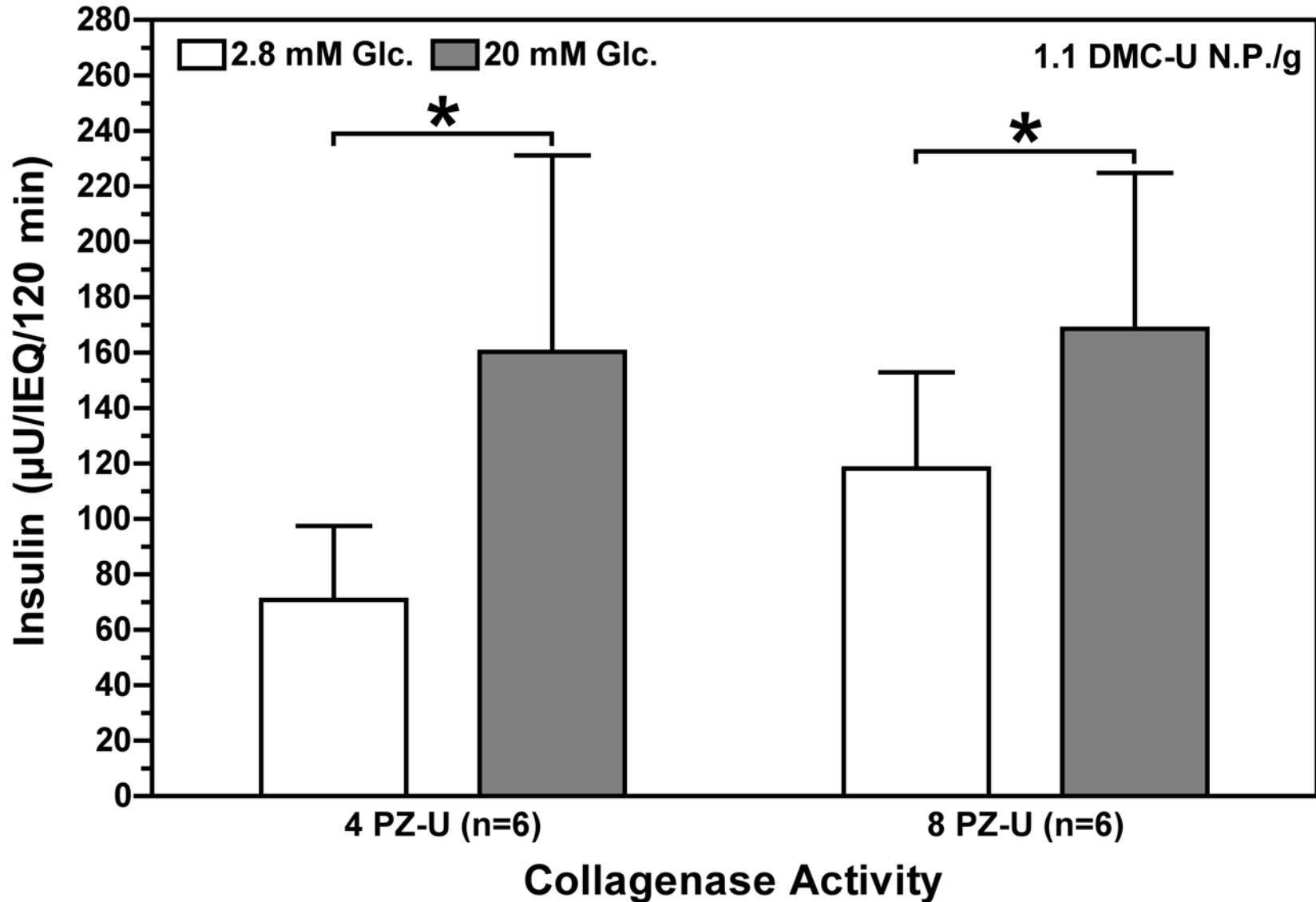
Influence of Collagenase Activity on Pig Islet Yield



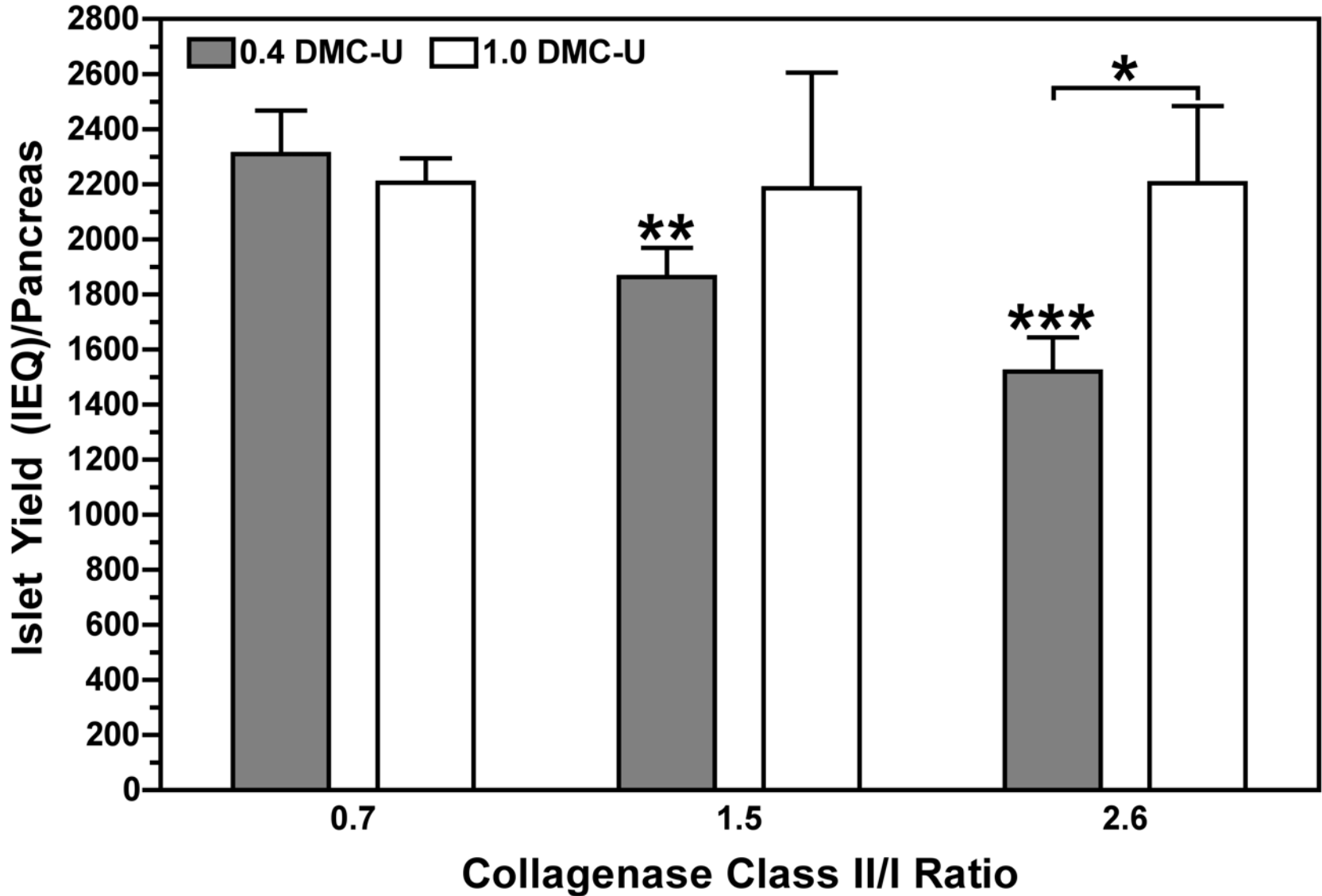
Influence of Collagenase Activity on Mitochondrial Viability of Pig Islets



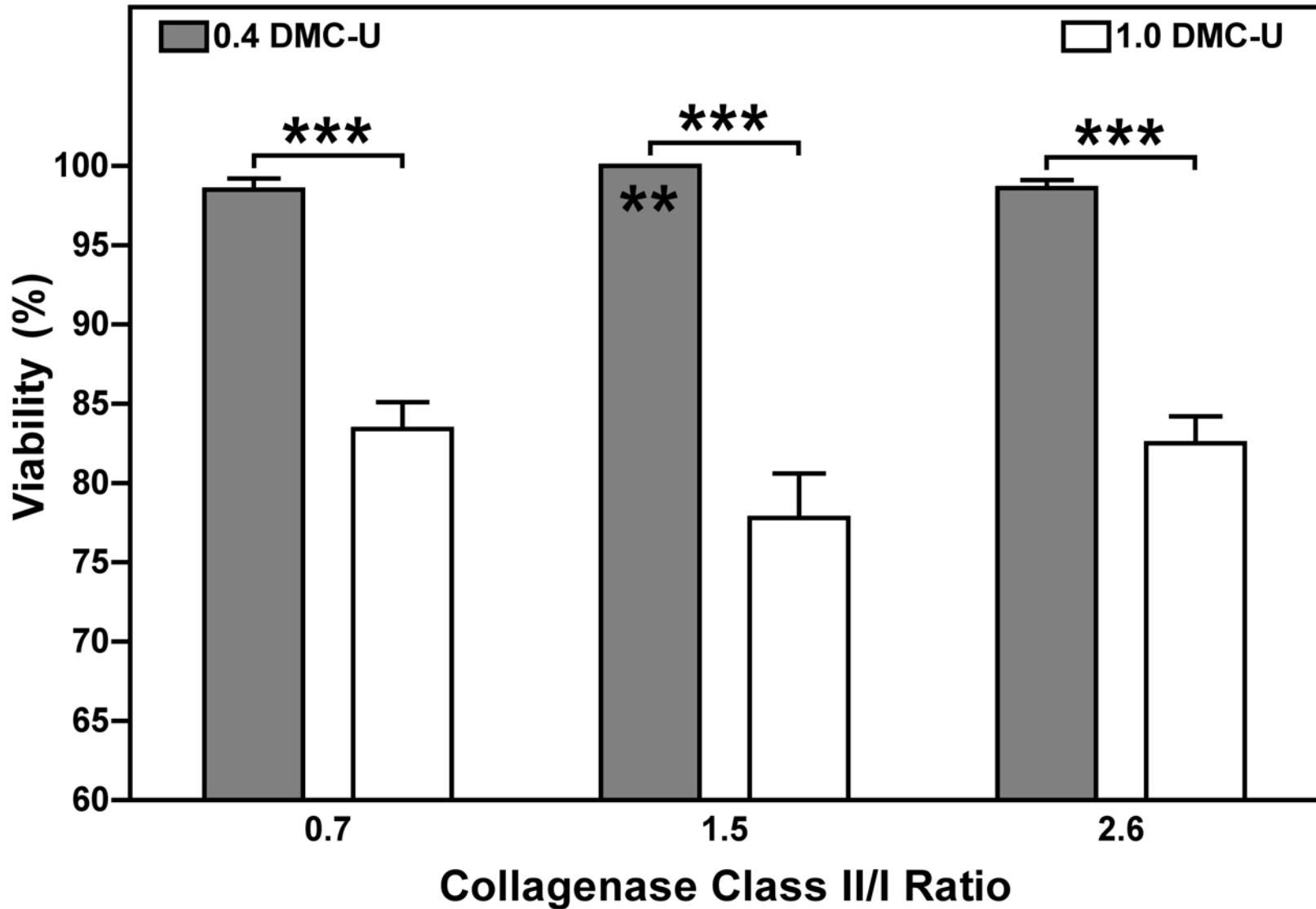
Influence of Collagenase Activity on Pig Islet In Vitro Function



Influence of Neutral Protease Activity on Efficiency of Different Collagenase Class II over I Ratios (I)



Influence of Neutral Protease Activity on Efficiency of Different Collagenase Class II over I Ratios (II)



Summary and Conclusion

Increasing NP activity:

- enhances enzymatic dissociation of human pancreatic tissue
- improves release of human islets from acinar tissue
- reduces postficoll purity reflecting acinar tissue damage
- deteriorates islet in vitro function and islet viability
- reduces islet survival and viability after culture
- the full efficiency of a certain class II/I ratio is reached only by minimizing neutral protease activity
- In contrast, overdosing purified collagenase has no detrimental effect on islet functional and morphological integrity.

NP activity has to be carefully adjusted within a small range.