INGAP Circles around Diabetes

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Diabetes is a prevalent disease with serious complications. Current treatment involves repeated daily insulin injections, self monitoring blood tests and dietary management. A novel treatment that has demonstrated regeneration of the islet cells in the pancreas was discovered. Islet NeoGenesis Associated Protein (INGAP) has been tested with encouraging results in tissue, animal, and human studies. However, INGAP's half-life is extremely short. Improving INGAP's efficacy may address the half-life problem as greater cell proliferation may result in longer treatment effect. The purpose of this investigation was to examine the hypothesis that a cyclic peptide (CP) of INGAP would have greater efficacy (in terms of cell proliferation) in comparison to the original linear form. RINm5F beta cells were treated with either linear INGAP or the CP of INGAP. Cell proliferation was measured by cell count, BrdU staining, and western blot for phosphorylated ERK1/2. Statistical data analysis using analysis of variance and post hoc t-tests revealed that the CP of INGAP was significantly more efficacious at cell proliferation than the linear INGAP on all three measures. In conclusion, this study's findings suggest that using the CP of INGAP might be an important and novel development in the use of INGAP as a treatment for diabetes. Future research will continue to examine its efficacy and other pharmacological properties.