26G-ISMS13 **Improvement in Pharmacokinetics and *In Vivo* Activity of Somatostatin by Chemical Glycosylation**

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Somatostatin is naturally occurring peptide hormone that inhibits the secretion of several hormones through the binding to five distinct receptor subtypes. Despite the wide variety of its activity, therapeutic indications of native somatostatin are limited due to its short plasma half-life. In the present study, we synthesized glycosylated somatostatin analogs by chemically attaching one to four complex type sialyloligosaccharide chain(s) to the somatostatin molecule. The plasma half-life was extended by approximately 10-fold by the attachment of a single glycan, and the half-lives were prolonged by increasing the number of attached glycans. A single glycan-attached somatostatin maintained a high affinity to all receptor subtypes as in the case of native somatostatin. Furthermore, the glycosylated somatostatin demonstrated an efficient inhibition of growth hormone release in rats. These results indicate that glycosylated somatostatin analogs could be a potent therapeutic drug candidate for several diseases where somatostatin receptor subtypes are closely involved.