



Figure 1. Mucin Core1 O-glycan structures of apoC-III. (A) Asialylated glycoforms (apoC-III₀): unglycosylated apoC-III (apoC-III_{0a}), GalNAc-apoC-III (apoC-III_{0b}), and Galβ1-3GalNAc-apoC-III (apoC-III_{0c}). ApoC-III_{0b} and apoC-III_{0c} respectively result from the sequential and concerted action of polypeptide GalNAc transferase (*ppGalNAcT*) and core1 galactosyl transferase-1 (*C1GalT-1*), two enzymes located in cis/median Golgi and organized in heteromeric complexes [18, 21]. (B) Monosialylated glycoforms (apoC-III₁): “normal” apoC-III₁ glycoform NeuAcα2,3Galβ1-3GalNAc-apoC-III as produced by beta-galactoside alpha-2,3-sialyl transferase-1 (*ST3Gal-1*). *ST3Gal-1* is located in median/trans Golgi [18, 19]. In brackets: putative “abnormal” apoC-III₁ glycoform Galβ1-3(NeuAcα2,6)GalNAc-apoC-III as aberrantly produced by alpha-N-acetylgalactosaminide alpha-2,6-sialyltransferase-1 (*ST6GalNac-1*) acting prior to *ST3Gal-1*. These two apoC-III₁ glycoisomers can also result from the loss of one sialic acid from bisialylated apoC-III₂. Minor apoC-III₁ truncated isoforms lacking one or two C-terminal alanine have also been described [8, 11]. (C) Bisialylated glycoform (apoC-III₂): NeuAcα2,3Galβ1-3(NeuAcα2,6)GalNAc-apoC-III as produced by *ST6GalNac-1*. *ST6GalNac-1* is located in the median/trans Golgi [18]. Minor apoC-III₂ isoforms lacking one or two C-terminal alanine have also been described [8, 11].