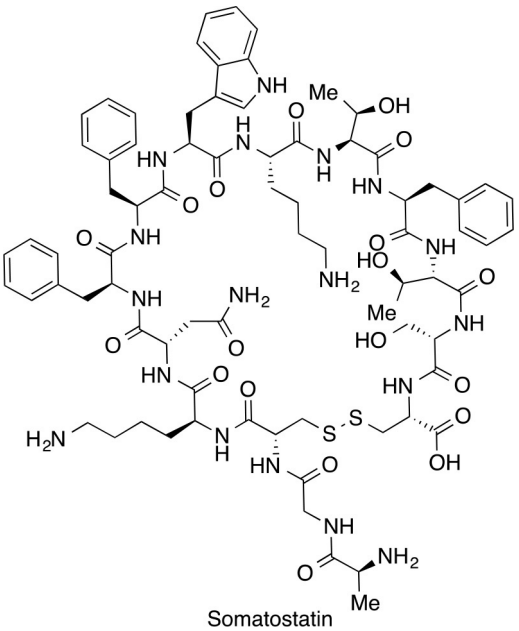
11 SOMATOSTATIN ANALOGS IN NEUROENDOCRINE TUMORS

Somatostatin is a major endocrine hormone with multiple physiological actions modulated by one or more of the five somatostatin receptors (SSTr).



Although the biological role and the cellular distribution of each receptor subtype are far from being completely understood, numerous somatostatin analogs with druglike properties and agonist activity are currently being used in the clinic to manage a number of pathophysiological conditions and as ligands for diagnosis or radiotherapy. Octeotride (Sandostatin®) and lanreotide (Somatuline®) control the clinical signals related to hypersecretion in SST_2 and SST_5-positive neuroendocrine tumors (NETs) and exert some antiproliferative activities.[106] Octeotride, the most widely used somatostatin analog, has been registered in most countries for the control of hormonal symptoms in patients with gastrointestinal and pancreatic NETs, as well as in patients with acromegaly. Both drugs can be administered by multiple or continuous subcutaneous injections, intravenously, or by slow-release intramuscular formulations (Sandostatin LAR® and Somatuline LAR®). A randomized phase III trial showed that long-acting octreotide has an antitumor effect in midgut NETs.[107] On the other hand, radiolabeled octapeptide analogs can be used to visualize tumors and metastases that bear SST_2 or SST_5, and also as radiotherapeutic agents.[108]