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We report on an experimental study which found that the spatial distribution of islets in the guinea pig pancreas has correlation dimension 1.5 in 2D sections, thus correlation dimension 2.5 in the 3D pancreas, up to an outer scale of 3 mm. Since many mammalian islets are innervated, and since Caserta showed that the growth of neuronal branching processes follows a diffusion limited aggregation (which has correlation dimension 2.5 in 3D), these results suggest a role for neuronal growth factors in islet formation. The findings and conclusions in this presentation have not been formally disseminated by the Food and Drug Administration and should not be construed to represent any Agency determination or policy. (Received September 16, 2008)