Supplementary Table 1. Numbers of Embryos* used for Different Experimental Approaches. A total of 138 protein iodinations were performed on 8 different proteins (NGF, NT-3, GDNF, FGF2, IGF1, cytochrome C, tetanus toxin C fragment, urotensin 1).

Categories	**NGF or NGF receptors**	**Other proteins/controls**	**Total**
Autoradiography	163	120	283
Immunoprecipitation	149		149
Immunocytochemistry	77	73	150
In situ hybridization	53		53
SDS PAGE	36		36
EM studies	27		27
6-OHDA experiments	39		39
Sums	**544**	**193**	**737**

* ~ 12,300 chicken eggs incubated; ~ 4,100 chicken eggs windowed; ~1,560 embryos injected; ~ 940 embryos survived; 737 embryos generated data.

Supplementary Figure 1. Tanycyte subtypes in the 4th ventricle and morphological characteristics of their cell bodies and basal processes extending to the locus coeruleus (LoC).

A, Cell body of an alpha tanycyte (left) and a beta-1 tanycyte (right) in the ependymal layer. Alpha tanycytes have only microvilli, but no cilia (Cl), while beta tanycytes have both. Alpha tanycytes have very little endoplasmic reticulum and Golgi, while beta tanycytes have abundant endoplasmic reticulum and Golgi (G). Tanycytes are connected to each other at the ventricular pole with zonulae adherens (small arrows). Beta-1 tanycytes are less electron-dense than alpha- or beta-2 tanycytes (see panel ***B***). ***B,*** Two beta-2 tanycyte cell bodies. Beta-2 tanycytes are darker than the beta-1 tanycytes. They contain abundant endoplasmic reticulum and Golgi (G), have microvilli as well as cilia, and, in this case, are heavily labeled by NGF silver grains (large red arrowheads). A zonula adheres is indicated with small arrows. Tanycyte subtypes in the ependyma of the 4th ventricle resemble those in the 3rd ventricle and show distinct morphological features in the cell bodies as well as basal processes (see next panels). ***C,*** Montage of a beta-1 tanycyte with a basal process that can be followed for nearly 25 μm continuously from the ventricular tanycyte surface. Note the light electron density of the cell body and the characteristic tightly packed microtubules in the basal process. The red arrowheads mark the left side of the basal process that is shown at higher magnification in the adjacent inset. Note the dense packing of microtubules. The smaller inset shows a trkA-labeled tanycyte (red arrow indicates the cell body) and its spatial relationship with a trkA-labeled LoC neuron. Felten et al. (1981) demonstrated the physical connection of these tanycytes shafts with LoC neurons in neonatal rabbits. ***D,*** Another basal process from a tanycyte with NGF-silver grain labeled synaptoid contacts (SC). Red arrowheads indicate the membranes of the basal process. The synaptoid contacts are typical and unique for tanycytes, whose basal process can contain up to 100 such contacts (Guldner and Wolff, 1973). These morphologies are very different from axodendritic synapses (see panel ***E***). ***E,*** Typical dendritic process, presumably a LoC dendrite (because of the close proximity to LoC cell bodies), with axo-dendritic synapses (ADS). Note the abundant synaptic vesicles on the presynaptic side and the distinct postsynaptic densities. The sizes of scale bars are indicated on the panels. The panels ***A*** and ***B*** have the same magnification.

Supplementary Figure 1.