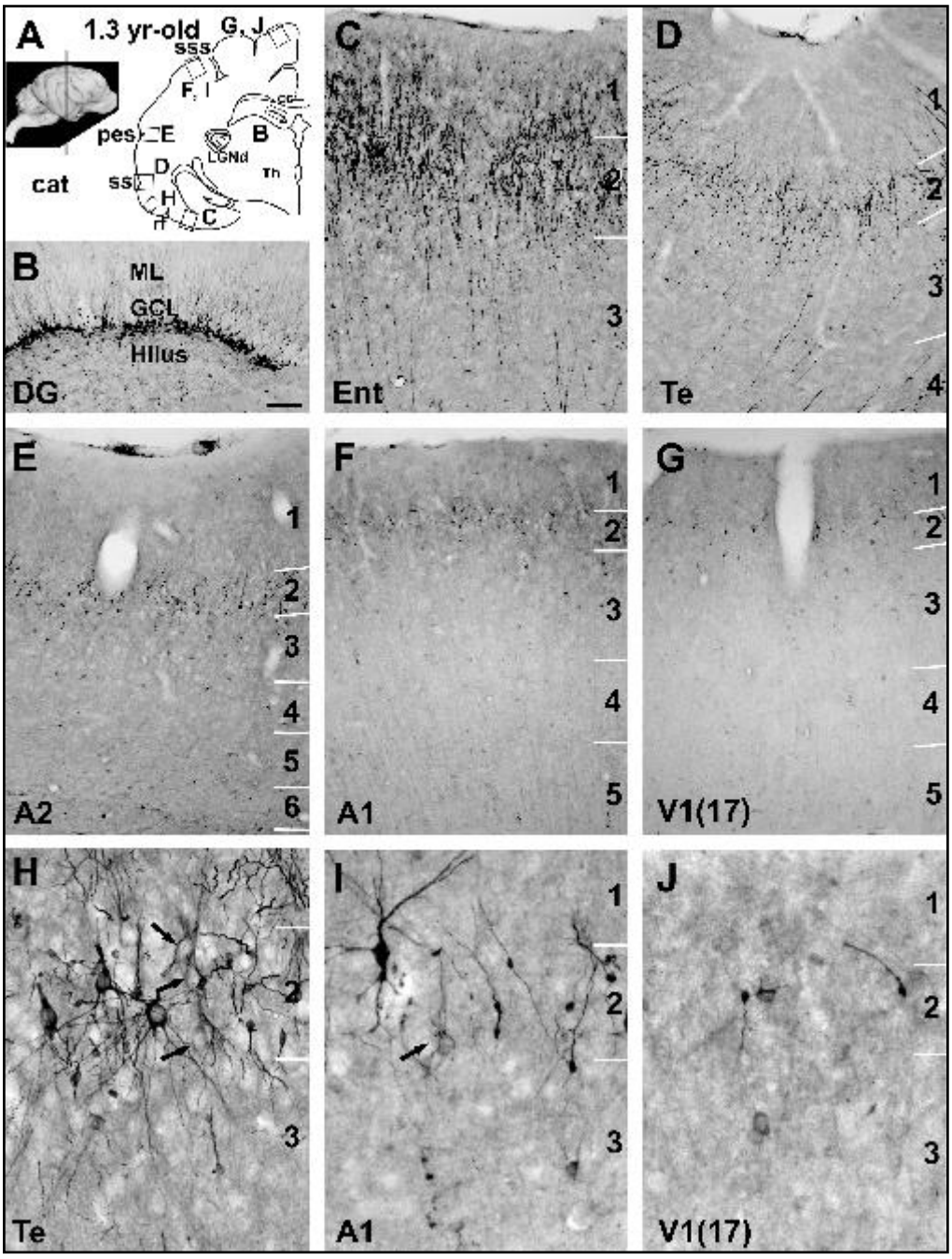
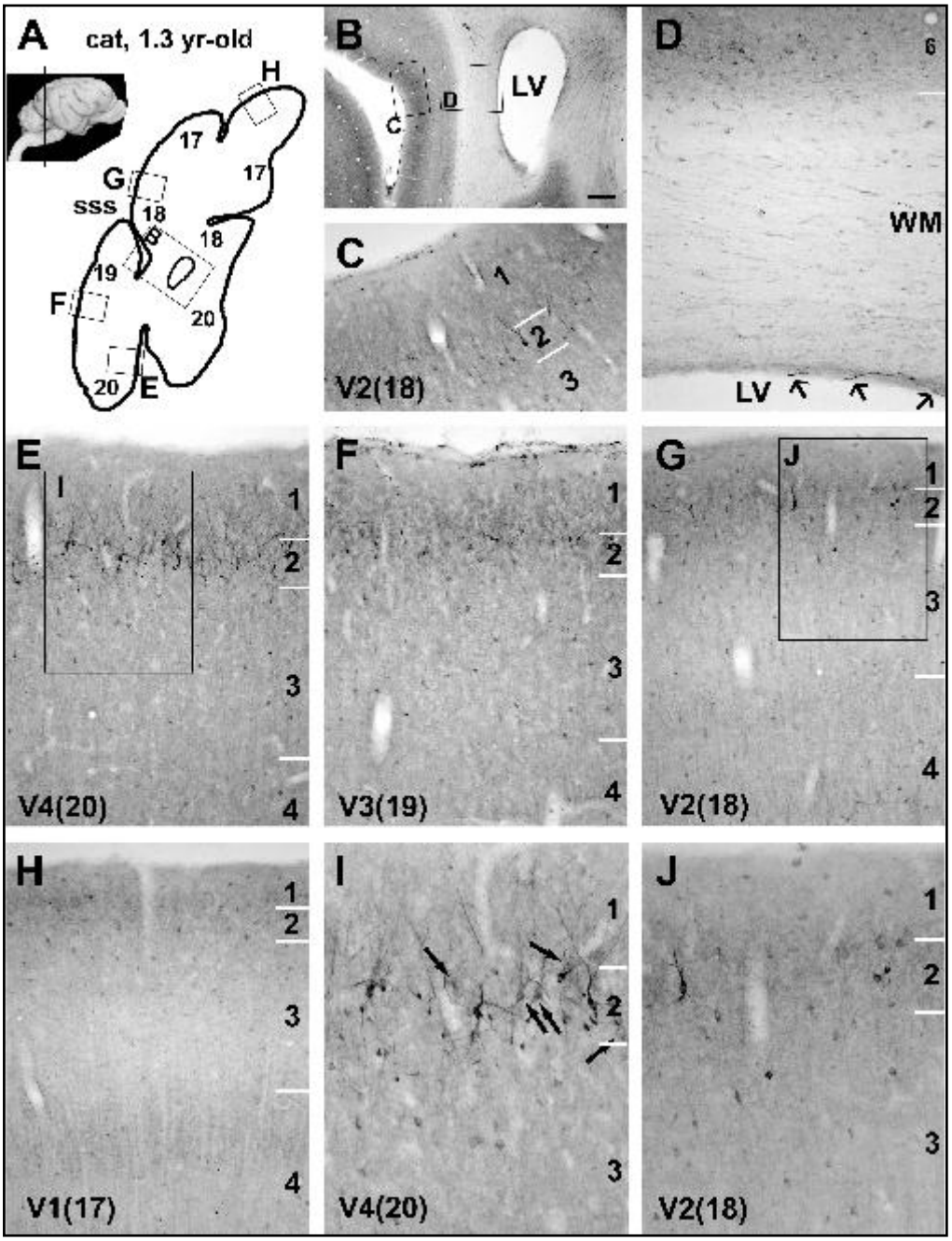
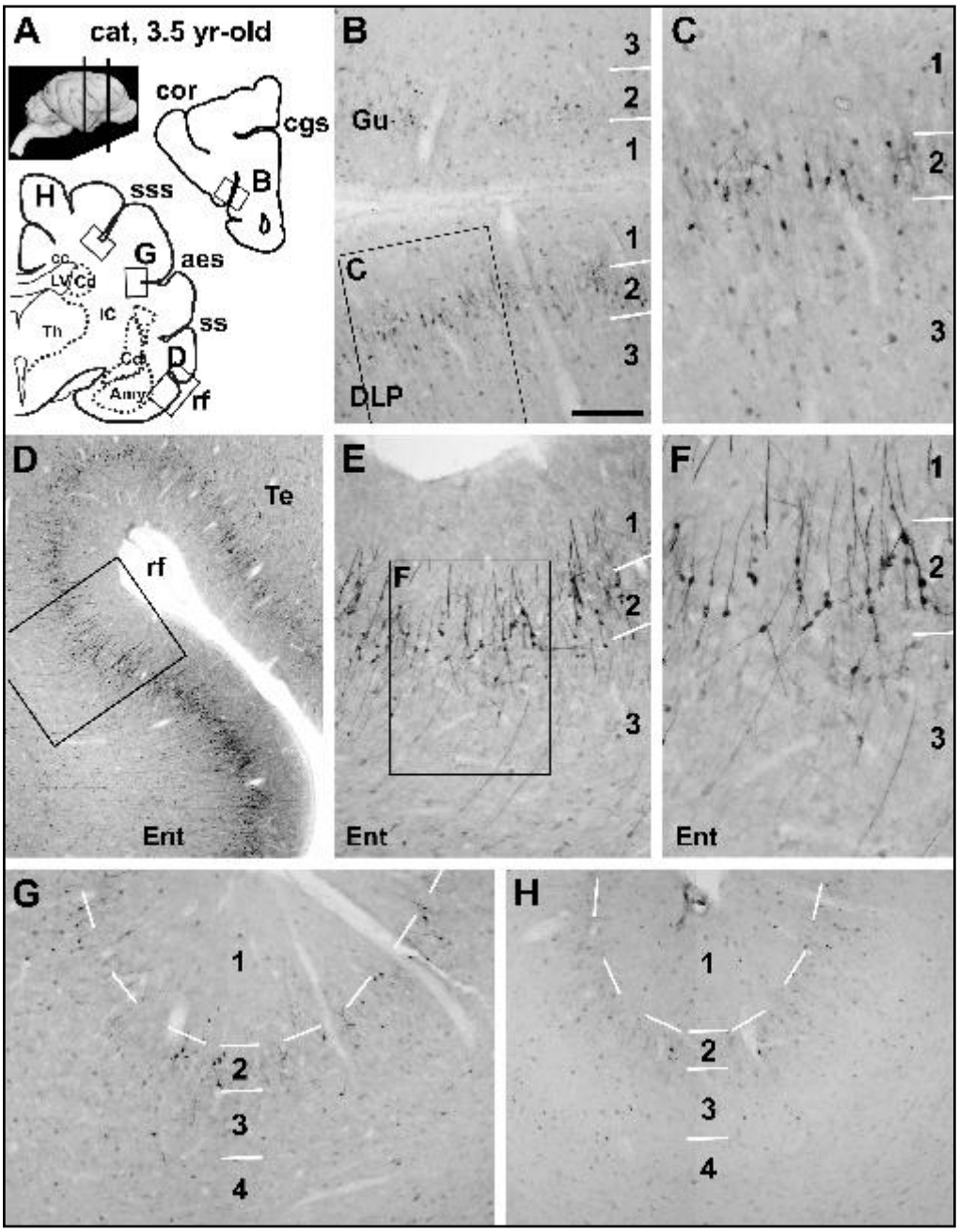


Supplemental Fig. 1. Doublecortin (DCX) immunolabeling in various cerebral areas of a young adult cat at the level of the dorsal lateral geniculate nucleus (LGNd), as indicated in the hemispheric map in panel A. Panel B shows intensive DCX labeling at the dentate subgranular zone in this cat (1.3 yr-old). Panels C–G illustrate a high to low gradient of labeling in layers II–III across the temporoparietal cortical areas, in ventrodorsal order from the entorhinal (Ent) (C), low temporal (Te) (D), auditory II (A2) (E), auditory I (A1) (F) and primary visual (V1 or area 17), areas. DCX+ cells in the entorhinal cortex are arranged as island formations in layer II (C). Labeled cells in layers II–III exhibit diverse morphological variation (H–J). Lightly stained cells in medium size are present across the cortex in low density (E–G, I, J). Arrows point to large cells with reduced DCX reactivity (H, I). Anatomic abbreviations are detailed in Table S1 (same for the following figures). Scale bar = 200 μm in B applying to C–G, equal to 50 μm for H–J.



Supplemental Fig. 2. Doublecortin immunolabeling in young adult cat occipital cortical areas as indicated on the hemispheric map in panel A. Panels B–D show labeling in the cortical area close to the posterior horn of the lateral ventricle (LV). Labeled cells occur in the cortex (V2 or area 18) deep to layer I, but are absent or rare in the white matter (WM) or the ventricular wall (arrows). Panels E–H illustrate a high to low gradient of labeled cells in layers II and adjacent III from ventrally located area 20 (V4) then area 19 (V3), to dorsally located area 18 (V2) then area 17 (V1). Medium-sized cells with weak reactivity spread over the cortex, mostly layers I–III, in an overall low density. These cells appear also reduced in V1 relative to the associate visual areas (H vs E–G). At higher magnification, many cells in the cellular band in these visual areas are medium to large, in contrast to the prefrontal (Fig. 1D), entorhinal or low temporal area (Figs. 2C–E) wherein most cells are small. These large cells are in multipolar shape with either distinct or reduced labeling intensity (arrows, I). Scale bar = 750 μm in B, equal to 150 μm for C–H and 75 μm for I and J.



Supplemental Fig. 3. Doublecortin immunoreactive (DCX+) cells in representative cortical areas of a 3.5 yr-old cat, as marked on the maps in A. Panel B shows labeled cells in the superficial layers of the dorsal lateral prefrontal (DLP) and gustatory (Gu) areas. Note the higher cell density in the former than the later area. Panels D–H show labeling in the temporoparietal cortical areas. DCX+ cells in layers II–III are considerably dense in the entorhinal and adjoining temporal areas, but are dramatically reduced in dorsally located cortical areas banking the anterior ectosylvian sulcus (aes) (S2–A2 transition, G) or the suprasylvian sulcus (sss) (transition of area 7 to anterior auditory area). Overall, labeled cells in layers II–III exhibit varying size, reactivity and morphology (C, F), whereas labeled cells in other layers are weak reactive medium-sized perikarya. Scale bar = 300 μm in B applying to E, equal to 750 μm for D; 350 μm for G, H and 150 μm for C, F.

Table 1: Abbreviations

Anatomical nomenclature	
A1	primary auditory field
A2	secondary auditory field
ACgG	anterior cingulate gyrus, area 24/32
Amy	amygdala complex
ias	inferior arcuate sulcus
CC	corpus callosum
Cd	caudate nucleus
cgs	cingulate sulcus
cor	coronal sulcus
cs	central sulcus
DG	dentate gyrus
DLP	dorsal lateral prefrontal cortex
DMP	dorsomedial prefrontal cortex
Ent	entorhinal cortex
ES	ectosylvian sulcus
GCL	granule cell layer
GP	globus pallidus
Gu	gustatory cortex
hf	hippocampal fissure
IC	internal capsule
IFG	inferior frontal gyrus
Ins	insular cortex
ips	intraparietal sulcus
ITG	inferior temporal gyrus
LGNd	dorsal lateral geniculate nucleus
lf	lateral fissure
LV	lateral ventricle
ML	molecular layer
MTG	middle temporal gyrus
mts	middle temporal sulcus
pes	posterior ectosylvian sulcus
PoG	postcentral gyrus
Pu	putamen
ps	principal sulcus
rf	rhinal fissure
RMS	rostral migratory stream
S1	primary somatosensory cortex (areas, 3, 2, 1)
S2	secondary somatosensory cortex
sas	superior arcuate sulcus
SFG	superior frontal gyrus
sts	superior temporal sulcus

STG	superior temporal gyrus
ss	sylvian sulcus
sss	suprasylvian sulcus
Sub	subiculum
Te	low temporal cortex
Th	thalamus
V1	primary visual cortex, area 17 (A17)
V2	secondary visual area, area 18 (A18)
V3	third visual area, area 19 (A19)
V4	fourth visual area, area 20 (A20)
VMF	ventromedial frontal cortex
Neurochemical markers	
CB	calbindin
CR	calretinin
DCX	doublecortin
GABA	γ-aminobutyric acid
GAD67	glutamic acid decarboxylase-67
GFAP	glial fibrillary acidic protein
NADPH-d	β-nicotinamide adenine dinucleotide phosphate diaphorase
NeuN	neuron-specific nuclear protein
nNOS	neuronal nitric oxide synthase
OX42	cytokine antigen OX42
PSA-NCAM	polysialylated neural cell adhesion molecule
PV	parvalbumin
SOM	somatostatin
TuJ1	neuron-specific beta-tubulin III