TABLE 15–1. Continued

*GABAergic Interneuron*

| *Group* | *No.* | *Suggested Name (1)* | *Localized Proteins Useful for Recognition (2, 3)* | *CA1* | *CA3* | *Dentate Gyrus* | *To Mossy Cells* |
|---|---|---|---|---|---|---|---|
| | 16 | Backprojection cell | ? | P | NP | ? | ? |
| | 17 | Oriens retrohippocampal | Calbindin, sd; M2 rec., sdm | P | ? | ? | ? |
| | 18 | Double projection | Calbindin, sd; SM, s; NPY, s; mGluR1a, sdm; mGluR7a, it | P | P | ? | ? |
| Interneuron-specific cells | 19 | Interneuron specific I. | Calretinin, sd; mGluR1a weak, sdm | P | NP | ? | ? |
| | 20 | Interneuron specific II. | VIP, s, a; mGluR1a weak, sdm | P | NP | ? | ? |
| | 21 | Interneuron specific III. | VIP, s, a; calretinin, sd, a; mGluR1a weak, sdm | P | NP | ? | ? |
| | 22 | Enkephalin expressing | ENK, s; VIP, s; mGluR1a weak, sdm | P | NP | ? | ? |
| Regional projection cells | 23 | Densely spiny hippocampal-septal | Calretinin, sd; NPY, s; SM, s | NA | P | P | ? |
| | 24 | Large nNOS positive | nNOS strong, sd, a; NPY, s, a | P | ? | ? | ? |
| | 25 | OML, outer molecular layer (6) | ? | NA | NA | P | NA |
| CA3/dentate specialized cells | 26 | CA3 hilar projection (7) | SM, s; NPY, s; mGluR1a, sdm | NP | NP | P | ? |
| | 27 | Mossy fiber associated | CCK, s, a; CB1, a | NA | P | ? | NP |
| | 28 | HICAP, hilar commissural associational path associated | ? | NA | NA | P | ? |

P, strong evidence as a cell type; NP, suggestive evidence, not proven; ?, not known; NA, not applicable; sdm, somatodendritic membrane; sd, soma and dendrite; a, axon; it, input terminals on soma and dendrite.

*Notes.* Molecular combinations alone without information on synaptic input–output relationships are weak predictors of a cell type. The presence of some molecules in a single cell is mutually exclusive, but this is not indicated here. The same names and numbering are used as in Figure 15.1; additional cell types are added here. The CA2 region is not listed separately, as the axons of many interneurons in the CA3 and to a lesser extent those in the CA1 area also innervate CA2. Interneurons mostly innervating only CA2 pyramidal cells also exist. Due to restrictions on references, individual papers cannot be cited describing each result. Numbers in parentheses represent the following: (1) Cell types with very partial characterization may be absorbed into other cell types with further analysis; (2) The subcellular locations of the highest concentration of molecular markers are indicated, but in some cases they may be present in other compartments as well; (3) The listed molecules may not be detectable in every individual member of a cell type; (4) I suggest that the HIPP cell (hilar perforant path associated) is homologous to the O-LM cells in the CA1 and CA3 regions in its hippocampal spatiotemporal position and role, although, unlike the O-LM cells, HIPP cells also project to the contralateral dentate gyrus; (5) The MOPP cell (molecular layer perforant path associated) may correspond to perforant path–associated cells of the CA1 area; (6) This neuron projects from the dentate outer molecular layer to the subiculum across the fissure; (7) This neuron projects from the CA3 area and the hilus to the septum with no other known long-range projection.