Supplementary Figure

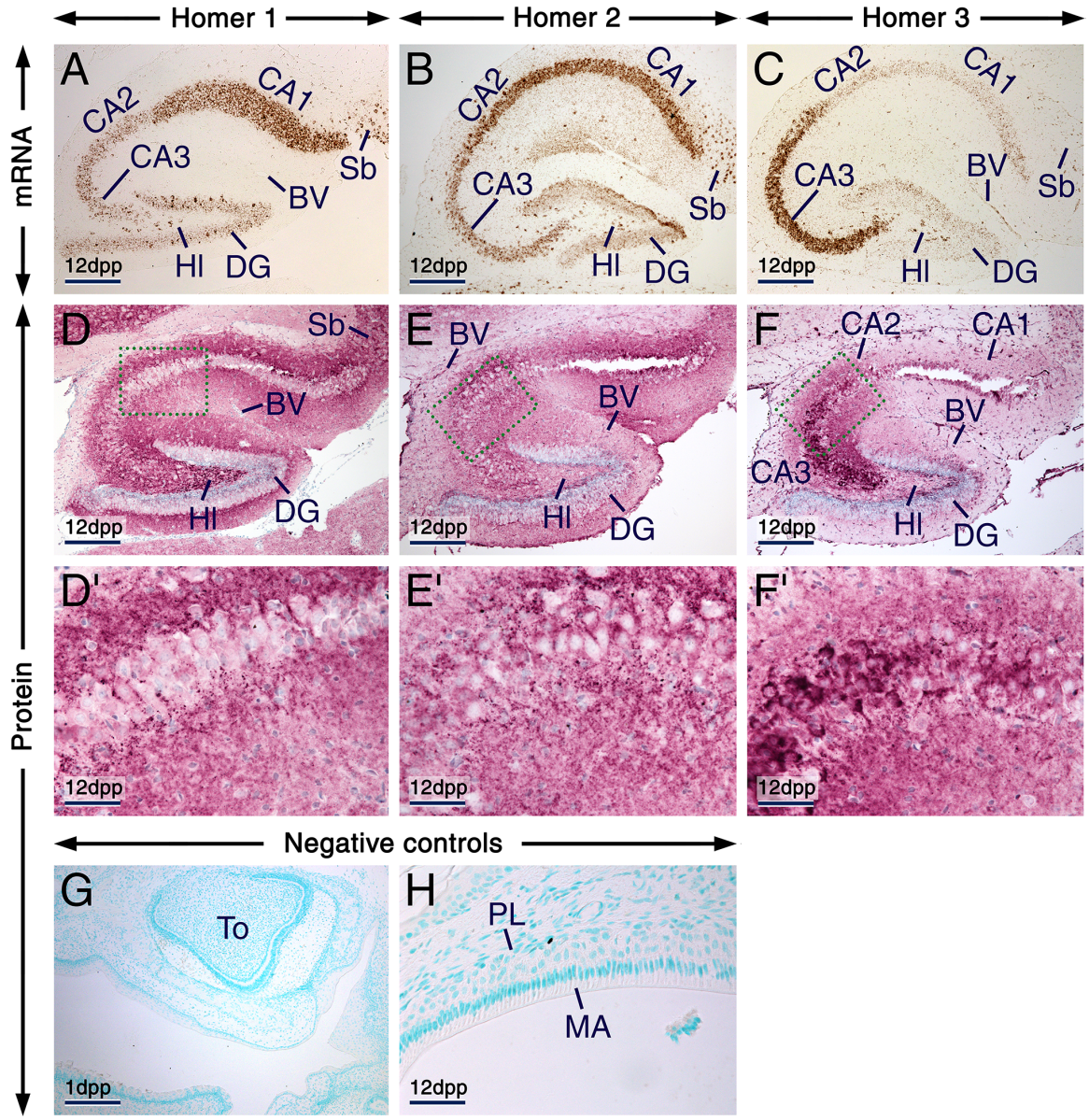

Figure S1. **Assessment of the specificities of Homer probes and Homer antibodies.** (**A-C**) Representative *Homer1* (**A**), *Homer2* (**B**) and *Homer3* (**C**) in situ hybridization data (the signals appear as a brown precipitate) in sections across the hippocampal formation at 12 days postpartum (12 dpp) showing enrichment of *Homer1*, *Homer2*, and *Homer3* transcripts in the hippocampal CA1, CA1-CA2, and CA3 regions, respectively, and expression of the three Homer family members in the dentate gyrus. Note that the transcripts are confined to neuronal somata. *Homer3* mRNA is also readily detectable in the endothelium of blood vessels in the hippocampal region and in meninges. (**D-F**) Representative immunostaining (purple) showing the distribution of Homer1 (**D**), Homer2 (**E**) and Homer3 (**F**) proteins in sections across the hippocampal formation at 12 dpp. The distribution of Homer proteins is consistent with the expression patterns of *Homer* transcripts, except that the proteins are enriched in neuronal processes. The vascular endothelium exhibits weak Homer1, moderate Homer2 and strong Homer3 immunostaining. **D'-F'** are magnified views of the boxed areas in **D-F**. (**G**,**H**). Sections across molar teeth at 1 dpp (**G**) and 12 dpp (**H**) processed for immunohistochemistry without the primary antibodies (negative controls) showing absence of immunostaining signals. BV, blood vessels; DG, dentate gyrus; Hl, hilus of the dentate gyrus; MA, maturation-stage ameloblasts; PL, papillary layer; Sb, subiculum; To, tooth. Scale bars: 200 μm (**A-F**,**G**) and 50 μm (**D'-F'**,**H**).

Table S1. Summary of the expression patterns of Homer proteins in murine cephalic tissues and organs

Tissue/cells	Homer1	Homer2	Homer3
		Tooth	
Dental placode	◊ +	*◊ +++	*◊ +++
Dental mesenchyme	–	* +++	* +++
Bud stage			
Dental epithelium	*◊ +++	*◊ +++	*◊ +++
Dental mesenchyme	*◊ ++	*◊ +	*◊ +
Cap stage			
Dental epithelium	*◊ +++	*◊ +++	*◊ ++++
Dental papilla mesenchyme	*◊ ++	* +	*◊ +++
Bell stage and advanced stages			
Inner dental epithelium	◊ ++	◊ ++	◊ +++
Dental papilla mesenchyme	* +	* +	* +++
Differentiating ameloblasts	◊ ++++	*◊ ++++	◊ ++++
Odontoblasts producing predentin matrix	*◊ ++	*◊ ++++	*◊ ++++
Stratum intermedium	◊ +	◊ +++	◊ ++
Secretory ameloblasts	*◊ ++++	*◊ ++++	*◊ +++
Maturation-stage ameloblasts	*◊ ++++	*◊ ++++	*◊ +++
Papillary layer	◊ ++	*◊ +++	*◊ +++
Young odontoblasts	◊ ++	*◊ ++++	*◊ +++
Mature odontoblasts	*◊ +++	*◊ ++++	*◊ +++
Dental pulp	◊ +	* ++	*◊ +++
Hertwig's epithelial root sheath	*◊ ++++	*◊ ++++	*◊ ++
		Forebrain	
Choroid plexus	‡◊ ++++	‡* ++++	‡◊ ++++
Hippocampal formation	*◊ ++++	*◊ ++++	*◊ ++++
Hypothalamus	*◊ +++	*◊ ++++	* ++++
Neocortex	*◊ ++++	*◊ ++++	*◊ ++++
Striatum	*◊ ++++	*◊ ++++	*◊ ++++
Thalamus	*◊ +++	*◊ ++++	*◊ ++++
Hypothalamic neuroepithelium	‡◊ +++	‡*◊ ++++	‡*◊ ++++
Ventricular layer	‡ +++	‡ ++++	‡ ++++
		Nasal cavity	
Olfactory epithelium	‡◊ ++++; †+++	‡◊ ++++; †++++	‡◊ +++; †+++
Respiratory epithelium	*◊ ++++	*◊ +++	*◊ +++
Glands	‡◊ ++++	‡* +++	◊ ++
		Vascular endothelium and cranial nerves	
Vascular endothelium	* ++	* +++	* ++++
Cranial nerves	All cranial nerves at E14.5 and postnatally: *+++	All cranial nerves at E14.5 and postnatally: *++++	Olfactory nerves at E14.5: *++++. Postnatal olfactory nerves: *+++. Other cranial nerves at E14.5 and postnatally: *+++

Eye			
Retina and lens epithelium	*◊ +++	*◊ +++	*◊ ++++
Cochlea			
Inner and outer hair cells	‡*◊ ++++	‡*◊ ++++	*◊ ++
Greater epithelial ridge	‡*◊ ++++	‡* ++	*◊ +++
Deiter's cells	◊ ++	* +	*◊ +++
Claudius's cells	*◊ +++	*◊ ++	*◊ +++
Reissner's membrane	*◊ ++	* +	*◊ +++
Stria vascularis	*◊ +++	*◊ +++	*◊ ++++
Spiral ganglion	*◊ ++++	*◊ +++	*◊ +++
Basilar membrane	* +	* ++	* ++++
Tongue			
Differentiating lingual epithelium	*◊ ++	*◊ +++	*◊ +++
Postnatal lingual epithelium	◊ ++	* +++	* +++
Differentiating taste buds	* ++++	* +++	–
Postnatal taste buds	* ++++	*◊ +++	*◊ ++
Lingual mesenchyme	*◊ +++	* +	* ++
Developing muscles	◊ +++	*◊ ++++	* ++
Postnatal muscles	§ ++++	◊ +++	◊ ++
Submandibular salivary gland			
Embryonic glands	‡*◊ +++	*◊ +++	*◊ +++
Postnatal glands	‡◊ ++++	‡* ++++	*◊ ++++
Secondary palate			
Rugae palatinae	++++	*◊ ++	◊ +++
Medial epithelial seam	*◊ +++	*◊ ++	*◊ +++
Alveolar bone			
Osteoblasts	*◊ +++	*◊ +++	*◊ ++
Osteocytes	–	* +++	* +++
Osteoclasts	*◊ +++	*◊ +++	*◊ ++++

Symbols ‡: enriched in apical membranes and/or in cilia; *: immunostaining of the cytoplasm and plasma membranes; ◊: strong immunostaining in intracellular puncta; †: detectable in subsets of cells, including in olfactory neuron somata and their dendrites and axons; §: banded pattern of immunostaining; very weak (+), weak (++), moderate (+++), and strong (++++) immunolabelling of the cytoplasm and plasma membrane. (–) undetectable immunolabelling. Intracellular Homer-positive puncta may be masked when the overall immunostaining is strong in a given cell.