Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Mixed.species_brain_1`	Cat (*Felis catus*), Brain	Tract Tracing Studies (Curated)	Anatomically defined cortical regions	Binary (Present/Absent), Directed	Collation of historical tract-tracing literature to form a binary connection matrix.	Harriger et al., 2012 [1]
`Drosophila_medulla_1`	Fly (*Drosophila melanogaster*), Medulla	Electron Microscopy (TEM)	Individual Neurons (379)	Chemical Synapse (8,637), Directed, Unweighted	Serial section TEM, semi-automated segmentation with dual-proofreader validation of synapses.	Takemura et al., 2013 [2]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Rhesus_brain_1`	Macaque (*Macaca*), Cerebral Cortex	Tract Tracing Studies (Curated via CoCoMac)	242 Cortical Regions (Hierarchical Map)	Binary (Present/Absent), Directed	Collation of 410 tract-tracing studies from CoCoMac database, mapped to a standardized 383-region atlas, then filtered for cortex.	Modha & Singh, 2010 [1, 3]
`Rhesus_brain_2`	Macaque (*Macaca*), Brain	Retrograde Tracer	91-area Cortical Atlas	FLNe (Fraction of Labeled Neurons), Directed, Weighted	Systematic retrograde tracer injections in 29 areas; exhaustive neuron counting and mapping to atlas; quantitative weighting with FLNe.	Markov et al., 2014 [4, 5]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Rhesus_cerebral_cortex_1`	Macaque (*Macaca*), Cerebral Cortex	Retrograde Tracer	91-area Cortical Atlas	FLNe (Fraction of Labeled Neurons), Directed, Weighted	Systematic retrograde tracer injections in 29 areas; exhaustive neuron counting and mapping to atlas; quantitative weighting with FLNe.	Markov et al., 2012; 2014 [6, 4]
`Rhesus_interareal_cortical_network_2`	Macaque (*Macaca*), Interareal Cortical Network	Retrograde Tracer	93 Cortical Areas (91-area atlas based)	FLNe (Fraction of Labeled Neurons), Directed, Weighted	Systematic retrograde tracer injections in 29 areas; exhaustive neuron counting and mapping to atlas; quantitative weighting with FLNe.	Markov et al., 2014 [4, 7]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Mouse_brain_1`	Mouse (*Mus musculus*), Brain	Anterograde Viral Tracing (EGFP)	213 Anatomical Regions (Allen CCF)	Normalized Projection Density, Directed, Weighted	High-throughput AAV-EGFP injections across the brain, whole-brain imaging, and registration to a common coordinate framework (CCF).	Oh et al., 2014 [8, 9]
`Mouse_retina_1`	Mouse (*Mus musculus*), Retina	Electron Microscopy (SBF-SEM)	Individual Neurons (950)	Synaptic Contact (Thresholded Area), Undirected, Binary	Serial block-face EM, automated segmentation combined with crowd-sourced manual proofreading.	Helmstaedter et al., 2013 [10, 11]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Kasthuri_graph_v4`	Mouse (*Mus musculus*), Somatosensory Cortex	Electron Microscopy (SEM)	Individual Neurons (1029)	Chemical Synapse (1700), Directed, Unweighted	ATUM-SEM for serial sectioning and imaging; saturated reconstruction of all cellular elements and synapses in a small cortical volume.	Kasthuri et al., 2015 [12, 13]
`Mouse_visual_cortex_1`	Mouse (*Mus musculus*), Visual Cortex	Functional Connectomics (2-photon + EM)	Individual Pyramidal Neurons (29)	Synaptic Connection, Directed, Weighted	*In vivo* 2-photon calcium imaging to measure function, followed by *ex vivo* EM reconstruction of the same neurons to map anatomical connections.	Cossell et al., 2015; Lee et al., 2016 [14, 15]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Mouse_visual_cortex_2`	Mouse (*Mus musculus*), Visual Cortex	Functional Connectomics (2-photon + EM)	Individual Pyramidal Neurons (195)	Synaptic Connection, Directed, Weighted	*In vivo* 2-photon calcium imaging to measure function, followed by *ex vivo* EM reconstruction of the same neurons to map anatomical connections.	Cossell et al., 2015; Lee et al., 2016 [14, 15]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Rattus.norvegicus_brain_1`	Rattus norvegicus (*Rattus norvegicus*), Brain	Neuroanatomical Experiments (Curated via BAMS)	Anatomical Regions (Swanson Atlas)	Qualitative Strength Scale, Directed, Weighted	Systematic curation of >16,000 connection reports from >250 published papers, standardized to a common nomenclature in the BAMS database.	Bota et al., 2015 [16, 17]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Rattus.norvegicus_brain_2`	Rattus norvegicus (*Rattus norvegicus*), Brain	Neuroanatomical Experiments (Curated via BAMS)	Anatomical Regions (Swanson Atlas)	Qualitative Strength Scale, Directed, Weighted	Systematic curation of >16,000 connection reports from >250 published papers, standardized to a common nomenclature in the BAMS database.	Bota et al., 2015 [16, 17]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`Rattus.norvegicus_brain_3`	Rattus norvegicus (*Rattus norvegicus*), Brain	Neuroanatomical Experiments (Curated via BAMS)	Anatomical Regions (Swanson Atlas)	Qualitative Strength Scale, Directed, Weighted	Systematic curation of >16,000 connection reports from >250 published papers, standardized to a common nomenclature in the BAMS database.	Bota et al., 2015 [16, 17]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
`C.elegans_herm_mal_male`	Worm (*C. elegans*), Whole Animal (Male)	Electron Microscopy (TEM)	Individual Neurons (385)	Chemical & Electrical Synapses, Directed, Weighted	Whole-animal serial section EM reconstruction and annotation, integrated with reanalysis of previous datasets to form a complete male connectome.	Cook et al., 2019 [18, 19]
`C.elegans_herm_pharynx_1`	Worm (*C. elegans*), Pharynx (Hermaphrodite)	Electron Microscopy (TEM)	Individual Neurons (20)	Chemical & Electrical Synapses, Directed, Weighted	Serial section EM reconstruction of the autonomous pharyngeal nervous system.	Albertson & Thomson, 1976; Cook et al., 2020 [20, 21]

Connectome ID	Species & Brain Region	Primary Modality / "Sensor"	Node Definition	Edge Definition & Weighting	Key Methodological Steps	Key Publication(s)
P.pacificus_neural_synaptic_1	Worm (*P. pacificus*), Head (Hermaphrodite)	Electron Microscopy (TEM)	Individual Neurons	Chemical Synapse, Directed, Unweighted	Serial section EM reconstruction of the head neuropil for comparative analysis with *C. elegans*. Homology assigned based on cell morphology.	Bumbarger et al., 2013; Hong et al., 2019 [22, 23]
P.pacificus_neural_synaptic_2	Worm (*P. pacificus*), Head (Hermaphrodite)	Electron Microscopy (TEM)	Individual Neurons	Chemical Synapse, Directed, Unweighted	Serial section EM reconstruction of the head neuropil from a second animal for comparative analysis.	Bumbarger et al., 2013; Hong et al., 2019 [22, 23]