- Function: Role in sensory and motor functions, and modulation of thalamic transmission.
- Structural Features: A thin layer of cells located ventral to the thalamus.
- 9. **PRC**: Perirhinal Cortex
 - Function: Object recognition and memory.
 - Structural Features: Located in the medial temporal lobe.
- 10. APN: Anterior Pretectal Nucleus
 - Function: Refining motor reflexes in response to visual stimuli.
 - **Structural Features**: Part of the pretectal region, situated anteriorly.
- 11. SPA: Septopallidal Area
 - Function: Connects the basal forebrain and midbrain, involved in reward mechanisms.
 - Structural Features: Located between the lateral septum and the internal capsule.
- 12. **SFPM**, **SPF**: Supraoptic Decussations of the Medial and Lateral Forebrain Bundle
 - Function: Pathways connecting various regions of the brain.
 - Structural Features: Located superiorly in the forebrain.
- 13. **LHA**: Lateral Hypothalamic Area
 - Function: Regulates thirst, hunger, and sleep-wake cycles.
 - **Structural Features**: Part of the hypothalamus, located laterally.
- 14. PH: Posterior Hypothalamus
 - **Function**: Temperature regulation, arousal, and sleep-wake transitions.
 - **Structural Features**: Posterior part of the hypothalamus.
- 15. **SUM**: Supramammillary Nucleus
 - **Function**: Role in spatial memory.
 - Structural Features: Positioned posterior to the mammillary bodies.

... and many more.

Given the level of detail in the image, and the vast number of regions labeled, this is a condensed overview of some of the structures present. A deeper dive into each region, complete with intricate details of function and connections, would be found in specialized literature, or databases like the Allen Brain Atlas.

Prompt 2:

Identify brain regions included by Thalamus in this image.

GPT-4V:

The thalamus is a complex structure with multiple nuclei. In the image you've provided, the following regions can be identified as part of the thalamus:

- 1. LP: Lateral Posterior Nucleus of the Thalamus
 - **Function**: Acts as a relay for visual and sensory information to the cortex.
 - Structural Features: Located in the dorsal region of the thalamus.
- 2. **PO**: Posterior Nucleus of the Thalamus
 - Function: Integrates and relays sensory and motor information.
 - Structural Features: Found posteriorly within the thalamus.
- 3. **VPM**: Ventral Posteromedial Nucleus of the Thalamus
 - Function: Responsible for relaying somatosensory information from the face to the cortex.
 - Structural Features: Part of the ventral thalamus, located medially.
- 4. **VPL**: Ventral Posterolateral Nucleus of the Thalamus
 - **Function**: Relays somatosensory information from the body to the cortex.
 - Structural Features: Positioned laterally in the ventral thalamus.

These are the thalamic nuclei that are labeled and visible in the image you provided. The thalamus contains additional nuclei not labeled or possibly not visible in this particular coronal section. Each of these nuclei has specific relay functions and connects different parts of the brain.