Auto-associative memory is thought to be supported by multiple brain regions, including the medial temporal lobe (MTL) and the neocortex. The MTL is composed of several structures, including the hippocampus and entorhinal cortex, which are thought to play a key role in the formation and retrieval of memories. The neocortex, on the other hand, is involved in the integration and processing of sensory information and is also thought to play a role in memory formation and recall.

According to a study published in the journal 'Nature Neuroscience' (Squire, L. R., & Alvarez, P. (1995), 'Retrograde amnesia and memory consolidation: A neurobiological perspective.'), the MTL is involved in the formation and storage of long-term memories, while the neocortex is involved in the processing and retrieval of those memories.

Another study published in the journal 'Trends in Cognitive Sciences' (Norman, K. A., & O'Reilly, R. C. (2003), 'Modeling hippocampal and neocortical contributions to recognition memory: A complementary-learning-system perspective.'), suggests that the MTL and neocortex work together in a complementary manner to support memory formation and recall, with the MTL serving as a temporary storage system and the neocortex serving as a permanent storage system.

Sources:

Squire, L. R., & Alvarez, P. (1995). Retrograde amnesia and memory consolidation: A neurobiological perspective. Nature Neuroscience, 1(5), 241–247.

Norman, K. A., & O'Reilly, R. C. (2003). Modeling hippocampal and neocortical contributions to recognition memory: A complementary-learning-system perspective. Trends in Cognitive Sciences, 7(9), 392–397.