

Monitoring connexin43 activity in the rodent brain using advanced MRI

AIM

Validating Manganese Enhanced MRI (MEMRI) as a new in vivo tool to assess astrocyte connexin 43 (Cx43) activity in the brain

METHODS

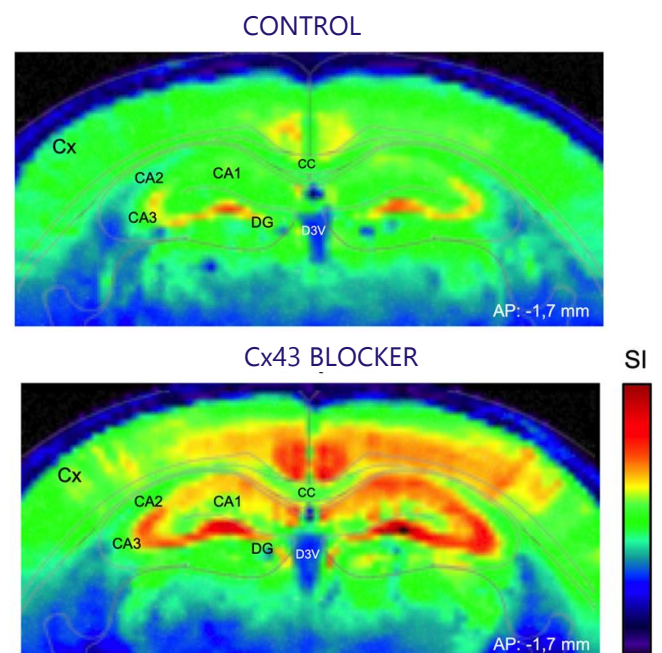
- T1-weighted MRI following i.p. administration of Mn²⁺ (Ca²⁺ analog used as an MRI contrast agent to map neuronal activity)
- Modulation of Cx43 functional activity using local astrocyte-specific Cx43 knockdown or systemic administration of Cx43 blockers

RESULTS

- Local Cx43 knockdown and systemic Cx43 blocking induces significant changes in MEMRI signal intensity

CONCLUSION

- Manganese Enhanced MRI is a promising technique for assessing the pharmacological profiles of Cx43 modulators

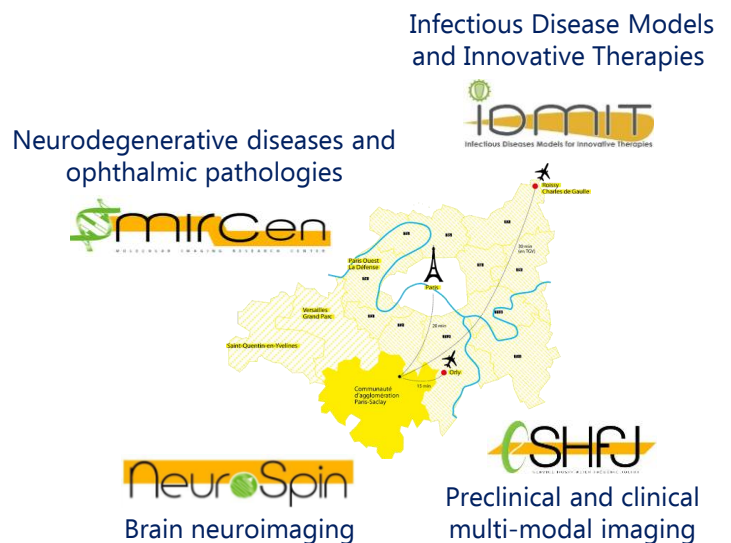


Effects of acute treatment with systemic Cx43 blocker versus Control on MEMRI signal intensity in the mouse hippocampus: T1-weighted MRI signal intensity (SI) in the hippocampus after treatment administration

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