P013 Characterising the expression of the MAST family of serine/threonine kinases using in situ hybridization

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The scaffolding of a kinase within an exact location allows it to phosphorylate specific substrates. MAST1, MAST2, MAST3, and MAST4 are characterised by the presence of a PKA-like serine/threonine kinase domain, and the protein-protein interaction domain, PDZ . MAST-L contains an extended kinase domain. The PDZ domain of MAST1-4 may therefore specify where its kinase domain is required. Interacting proteins, and kinase activity, have been established for some of the MAST family members by our lab, and others.

Northern blot analysis has identified expression of MAST1, 2 and 4 within brain. This observation has been investigated further using *in situ* hybridization.

MAST1-4 are expressed in the hippocampus and cortex. MAST1/2/4 are expressed in the cerebellum, MAST1/2 in the dorsal 3rd ventricle, MAST4 in the corpus callosum, and MAST3 in the striatum. MAST-L was not found to be expressed in the brain using this assay.

The neuronal expression of MAST1-4 in the hippocampus is in contrast to the non-neuronal expression of MAST1/2 in the 3rd ventricle and MAST4 in the corpus callosum; and suggests the MAST family has both unique and overlapping functions within the brain.

This initial characterisation is being broadened to define the molecular functions of this family of kinases with particular focus on the activity-regulated member MAST4.