



## Editorial

## Neurodegeneration: The emerging non-coding connections



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Neurodegenerative diseases comprise a wide class of pathological disorders, including Alzheimer's, Parkinson's and Huntington's diseases, spinocerebellar ataxia (SCA), frontotemporal dementia (FTD), amyotrophic lateral sclerosis (ALS). ncRNAs in the form of long ncRNAs (lncRNAs), circular RNAs (circRNAs) and microRNAs (miRNAs) are abundantly expressed in the central nervous system. Protein-coding genes occupy less than 2% of the genome, yet they are heavily studied in neurological function. In comparison, the role of ncRNAs have only attracted a small degree of attention. However, over recent years there has been a significant outpour in the number of studies demonstrating the important roles played by ncRNAs in brain development, function, plasticity and disease. In this special issue entitled 'Neurodegeneration: The Emerging Non-coding Connections' we have gathered a number of important reviews which highlight recent advances for the role of ncRNAs in neurodegenerative diseases.

Gagliardi et al. and Andrew Douglas discuss the role of ncRNAs in ALS [1,2]; highlighting the complex roles these classes of RNAs play in ALS and how much work is still required for understating how they contribute to the pathological nature of ALS. Tatyana Shelkovich and colleagues outline novel roles for nuclear paraspeckles in neurodegeneration [3]. Duncan Ayers and Charles Scerri provide an extensive review of the role of ncRNAs in dementia [4], while Dipen Rajgor provides an overview of miRNAs in neurodegeneration [5]. Maria Paola Paronetto and colleagues describe therapeutic interventions miRNAs may play in treating motor neuron diseases [6]. Shobana Sekar and Winnie Liang describe the roles of circRNAs in brain function and how these are tied to neurodegenerative diseases [7].

Together, these reviews provide a compelling overview of the

mechanistic roles played by ncRNAs in neurodegenerative disorders and how they can be potentially targeted to therapeutically treat diseases involving pathology associated with the central nervous system.

## References

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