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### CMST COST Action CM1103

## Structure-based drug design for diagnosis and treatment of neurological diseases: dissecting and modulating complex function in the monoaminergic systems of the brain

The therapy of neuropsychiatric disorders is limited by the high variability of symptoms and behavioural disturbances. Few drugs are available to address specific subsets of neurological/mental symptoms, and none to aid in diagnosis or to stop the progress of neurodegenerative disorders.

Neurotransmitters such as dopamine and serotonin play a central role in the pathophysiology of major neuropsychiatric illnesses, such as anxiety and mood disorders, schizophrenia, autism-spectrum disorders, Parkinson's disease, epilepsy, and dementias. Neurotransmitter-binding proteins such as receptors, transporters and common metabolic enzymes are the starting points for development of tools to diagnose and drugs to treat specific clusters of symptoms.

Structure-based drug design, synthetic chemistry and biological characterisation will inform the choice of lead compounds to treat select subsets of brain malfunction. COST collaboration facilitates the cross-disciplinary interaction for discovery of promiscuous drugs for diagnosis and treatment of complex brain diseases. In addition to addressing a clinical need, bringing together academic scientists with a broad range of techniques and knowledge, this close collaboration will enrich interdisciplinary scientific training to design chemical tools for neuropathology across Europe, and provide lead compounds with the potential for transfer to the European pharmaceutical industry.

(Descriptions are provided by the Actions directly via e-COST.)

### Chemistry and Molecular Sciences and Technologies COST Action CM1103

#### ▶ [Description](#)

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### General Information\*

**Chair of the Action:**  
[Dr Rona RAMSAY](#) (UK)

**Vice Chair of the Action:**  
[Prof Laura DELLA CORTE](#) (IT)

**Science officer of the Action:**  
[Dr Lucia FORZI](#)

**Administrative officer of the Action:**  
[Ms Svetlana VOINOVA](#)

### Downloads\*

**Action Fact Sheet**  
[Download AFS as .RTF](#)

**Memorandum of Understanding**  
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**Progress Report**  
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**Poster**  
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### Websites\*

**Action website:**  
<http://www.neurodrugdesign.org/index.html>

\* content provided by e-COST.  
Data is synchronised once per night.

### Publications

▶ [Xjenza Online - Journal of Malta Chamber of Scientists](#)

▶ [Structure-based drug design for diagnosis and treatment of neurological diseases](#)

