UPPSALA UNIVERSITET

Molecular Biotechnology Programme

Uppsala University School of Engineering

UPTEC X 06 004	**Date of issue 2006-01**

Author

Sara Olsson

Title (English)

SOD1 dimerisation assay development

Title (Swedish)

Abstract

Monomerization and aggregation of the homodimeric enzyme Cu/Zn-superoxide dismutase 1 (SOD1) are events involved in the familial variant of the degenerative neuromuscular disorder Amyotrophic lateral sclerosis (ALS). To prevent monomerization and aggregation, we search for stabilising compounds that can bind to a pocket between the monomers. The objective of this work was to test published SOD1 stabilisers (Ray *et al.*) for binding using STD-NMR and to use the verified binders as positive controls when developing an HTS-assay based on SOD1 activity. The result of the work showed that the published compounds do not bind to SOD1, and that SOD1 activity is not a good marker for SOD1 stability. To continue this work, new positive controls have to be identified, and a new HTS-assay has to be developed.

Keywords

Amyotrophic lateral sclerosis, Cu/Zn-superoxide dismutase 1, dimerisation, STD-NMR, relaxation filter NMR, assay development, high throughput screening, analytical gel filtration

Supervisors

Mats Kihlén Thomas Lundbäck Johan Schultz
Biovitrum AB, Stockholm

Scientific reviewer

Gunnar Johansson
Department of Biochemistry, Uppsala University

Project name	Sponsors
Language **English**	Security
ISSN 1401-2138	Classification
Supplementary bibliographical information	Pages **36**

Biology Education Centre Biomedical Center Husargatan 3 Uppsala
Box 592 S-75124 Uppsala Tel +46 (0)18 4710000 Fax +46 (0)18 555217