

Intestinal cell targeting of a stable recombinant Cu-Zn SOD from *Cucumis melo* fused to a gliadin peptide

Submitted by Emmanuel Lemoine on Thu, 10/16/2014 - 14:03

Titre	Intestinal cell targeting of a stable recombinant Cu-Zn SOD from <i>Cucumis melo</i> fused to a gliadin peptide
Type de publication	Article de revue
Auteur	Intes, Laurent [1], Bahut, Muriel [2], Nicole, Pascal [3], Couvineau, Alain [4], Guette, Catherine [5], Calenda, Alphonse [6]
Editeur	Elsevier
Type	Article scientifique dans une revue � comit� de lecture
Ann�e	2012
Langue	Anglais
Date	Mai 2012
Num�ro	1-2
Pagination	99-107
Volume	159
Titre de la revue	Journal of Biotechnology
ISSN	0168-1656
Mots-cl�s	<i>Cucumis melo</i> [7], Gliadin peptide [8], Hybrid Cu/Zn SOD [9], Intestinal targeting [10]
R�sum� en anglais	<p>The mRNA encoding full length chloroplastic Cu-Zn SOD (superoxide dismutase) of <i>Cucumis melo</i> (Cantaloupe melon) was cloned. This sequence was then used to generate a mature recombinant SOD by deleting the first 64 codons expected to encode a chloroplastic peptide signal. A second hybrid SOD was created by inserting ten codons to encode a gliadin peptide at the N-terminal end of the mature SOD. Taking account of codon bias, both recombinant proteins were successfully expressed and produced in <i>Escherichia coli</i>. Both recombinant SODs display an enzymatic activity of ~5000 U mg⁻¹ and were shown to be stable for at least 4 h at 37 �C in biological fluids mimicking the conditions of intestinal transit. These recombinant proteins were capable <i>in vitro</i>, albeit at different levels, of reducing ROS-induced-apoptosis of human epithelial cells. They also stimulated production and release in a time-dependent manner of an autologous SOD activity from cells located into jejunum biopsies. Nevertheless, the fused gliadin peptide enable the recombinant Cu-Zn SOD to maintain a sufficiently sustained interaction with the intestinal cells membrane <i>in vivo</i> rather than being eliminated with the flow. According to these observations, the new hybrid Cu-Zn SOD should show promise in applications for managing inflammatory bowel diseases.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua4916 [11]
DOI	10.1016/j.jbiotec.2012.02.019 [12]
Lien vers le document	http://dx.doi.org/10.1016/j.jbiotec.2012.02.019 [12]

Liens

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=7997](http://okina.univ-angers.fr/publications?f[author]=7997)
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=7998](http://okina.univ-angers.fr/publications?f[author]=7998)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=7999](http://okina.univ-angers.fr/publications?f[author]=7999)
- [4] [http://okina.univ-angers.fr/publications?f\[author\]=8000](http://okina.univ-angers.fr/publications?f[author]=8000)
- [5] <http://okina.univ-angers.fr/catherine.guette/publications>
- [6] [http://okina.univ-angers.fr/publications?f\[author\]=7968](http://okina.univ-angers.fr/publications?f[author]=7968)
- [7] [http://okina.univ-angers.fr/publications?f\[keyword\]=9319](http://okina.univ-angers.fr/publications?f[keyword]=9319)
- [8] [http://okina.univ-angers.fr/publications?f\[keyword\]=9320](http://okina.univ-angers.fr/publications?f[keyword]=9320)
- [9] [http://okina.univ-angers.fr/publications?f\[keyword\]=9321](http://okina.univ-angers.fr/publications?f[keyword]=9321)
- [10] [http://okina.univ-angers.fr/publications?f\[keyword\]=9322](http://okina.univ-angers.fr/publications?f[keyword]=9322)
- [11] <http://okina.univ-angers.fr/publications/ua4916>
- [12] <http://dx.doi.org/10.1016/j.jbiotec.2012.02.019>

Publié sur *Okina* (<http://okina.univ-angers.fr>)