

## Submission on A1186 Soy Leghemoglobin in meat analogue products

My concerns about the introduction of recombinant soy leghaemoglobin are:

1. The leghaemoglobin protein is made using a transgene in a yeast, *Pichia pastoris*. I would need to be reassured that either the leghaemoglobin is purified to the extent that there are no other contaminants (which I understand is not the case), or that any other contaminants arising either from the yeast, or from any other proteins carried on the transgene, have been shown to be safe. I do not believe that this has been done, and I am not aware of other use of *Pichia pastoris* proteins in food that might indicate safety.
2. It is well understood that when proteins are digested, peptides are produced that may have biological activity in their own right, and that this may have a positive or negative effect on health, depending on the peptide. Such peptides have been implicated, for example, in Coeliac disease and in other forms of gluten intolerance, and are considered likely to be the cause of a number of other food allergies. At present, nothing is known about the peptides that would be produced during human digestion of leghaemoglobin, and what their biological activity (if any) may be. I note that an *in silico* analysis has been done, but this is merely theoretical and may not reflect what happens *in vivo*. I also note that the *in vitro* study that was reported did not identify any residual peptides by polyacrylamide gel electrophoresis, but I would point out that the expected peptides would not be large enough to be seen on the gel, but might still have considerable bioactivity.

Until these concerns are answered, it would be inappropriate to approve this material as a safe food ingredient.