

Ho Replies To Morton

Roger Morton's submission to the GM Science Review in response to the first submission from ISIS, "ISIS' response to ACRE's response to Chardon LL" contains some misrepresentations that I should like to put right.

On horizontal gene transfer, I have referred to the work of Doerfler's group over a period of time, indicating that ingested transgenic DNA can pass through the gut and placenta to the cells of the animal, including those of the foetuses and newborn. I did not state that transgenic DNA could go into the germ cells, nor did I intend to cite Hohlweg and Doerfler's paper to that effect. The early references are well known, I and others have cited them frequently. Here they are:

1. Schubbert R, Rentz D, Schmitz B and Döerfler W. Foreign (M13 DNA ingested by mice reaches peripheral leukocytes, spleen and liver via the intestinal wall mucosa and can be covalently linked to mouse DNA. *Proc. Nat. Acad. Sci. USA* 1997, 94, 961-6.
2. Döerfler W, and Schubbert R. Uptake of foreign DNA from the environment: the gastrointestinal tract and the placenta as portals of entry. *Wien Klin. Wochenschr.* 1998, 110, 40-4.

I have reviewed the recent paper by Hohlweg and Doerfler in some detail in an earlier report, entitled, "**Suppression & denial over horizontal gene transfer**", which I now submit to the GM Science Review. My report criticised that paper for falling short of obtaining definitive results that could easily have been accomplished by comparing the transfer of transgenic and non-transgenic DNA *in the same GM food sample*.

Morton's critique on our definition of naked DNA is irrelevant, as both naked and protein/histone covered DNA can nevertheless be transferred, as shown, for example, by FSA's released report on the transfer of transgenic DNA from GM soya flour to gut bacteria, which again, I have had the occasion to review in detail, in a report entitled, "**Stacking the odds against finding horizontal gene transfer**". I criticised that experiment for having been designed to bias against detecting horizontal transfer of transgenic DNA, hence the actual transfer could be far more extensive than reported (in the gut content of individuals with colostomy bags). The fact that transgenic DNA could not be detected from the faeces of healthy individuals is not reassuring because transgenic DNA may have passed through the gut wall into the bloodstream, a possibility suggested by findings from Doerfler's group mentioned above. No attempt was made to monitor for transgenic DNA in the bloodstream. I now submit this second report to the GM Science Review.

On the hazards of *Agrobacterium*, I have written a detailed report reviewing relevant literature suggesting a possible scenario that the *Agrobacterium*-based vector system could be a vehicle for gene escape, a suggestion first made in a UK MAFF commissioned research. This third report, "**Averting sense for nonsense in horizontal gene transfer**" I now submit to the GM Science review.

All three reports have previously been circulated on the ISIS' e-mail list and appeared in *Science in Society* Fall 2002, issue 16.

On CaMV 35S promoter and transgenic instability, Morton has not raised any point that I have not already replied to in my first submission. It is for the panel to judge.

Similarly, I stand by what I have written on the similarity between transgenic constructs used in genetic modification of plants, animals and human cells. Note that since my first submission to the GM Science Review, gene therapy has claimed its second cancer victim.

All of the above points will be dealt with in greater detail in my forthcoming book, *Living with the Fluid Genome*, ISIS and TWN, London and Penang, 2003.

Encl:

Suppression & denial in horizontal gene transfer

Stacking the odds against finding horizontal gene transfer

Averting sense for nonsense in horizontal gene transfer