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Re: Creation of competent strains of E. coli (W3110) at the London Hackspace

To whom it may concern,

This declaration is in support of the legality of inducing competence in the W3110 strain of E. coli at the London Hackspace. It refers to guidance from the United Kingdom Health and Safety Executive, and specifically to the following documents:

1. Document 2000 No. 2831, The Genetically Modified Organisms (Contained Use) Regulations 2000 (hereafter known as the "GMO Regulations");
2. The Approved List of Biological Agents, published on 10 February 2004 (the "Approved Agents list"); and
3. The Control of Substances Hazardous to Health Regulations 2002 (the "Hazardous Substances Regulations").

Section 0. Background

The London Hackspace is a non-profit, community run space in central London. The London Hackspace Biohackers are a molecular and microbiology research group who regularly meet at the London Hackspace. The group consists of both professional and amateur biologists.

Section 1. No genetic modification.

Special regulations apply to working with genetically modified organisms. We believe that W3110 will not be genetically modified at any point during the work undertaken at the London Hackspace.

We will work with W3110 in both non-competent and competent forms. The non-competent form is a standard laboratory strain. Inducing competence does not

constitute genetic modification, as exemplified in Schedule 2 of the GMO Regulations, because the process:

1. Does not introduce nucleic acid molecules produced outside the organism;
2. Does not introduce any heritable genetic material prepared outside the organism, and
3. Does not cause cells to fuse in a non-natural way to produce new cells to produce cells with new combinations of genetic material. (Refer to Schedule 2, Part II of the GMO Regulations for a definition of natural cell fusion).

Because the only activity we are performing on W3110 is induction of competence, and because competence induction does not constitute genetic modification, the regulations related to genetic modification do not apply in this case.

Section 2. Compliance with other regulations.

We believe that activities at the London Hackspace are covered by the Hazardous Substance Regulations through Section 19, 'Extension of the meaning of "Work"'. This Section extends the meaning of "work" to any activity involving the consignment, storage, or use of a Group 2, 3 or 4 biological agent.

The Approved Agents list describes *E. coli* as a Hazard Group 2 biological agent. However, the W3110 strain is a derivative of the K-12 group of laboratory strains. The K-12 strain and its derivatives are safe strains and may be considered part of Hazard Group 1. The Hazardous Substances Regulations does not concern itself with substances in Hazard Group 1.

Because the Hazardous Substances Regulations are the only regulations concerning themselves with the handling of microorganisms, and because W3110 is not covered by the Hazardous Substances Regulations, we believe that there is no legal restrictions on the creation of competent strains of W3110.

Section 3. Declaration

I, Nicholas FitzRoy-Dale, declare that to the best of my knowledge there are no legal restrictions on the creation of competent strains of W3110 at the London Hackspace.



Nicholas FitzRoy-Dale

Section 4. References.

London Hackspace: <https://london.hackspace.org.uk>

London Hackspace Biohackers:

<http://wiki.london.hackspace.org.uk/view/Biohacking>

GMO

Regulations: http://www.legislation.gov.uk/uksi/2000/2831/pdfs/uksi_20002831_en.pdf

Approved Agents List: <http://www.hse.gov.uk/pubns/misc208.pdf>

Hazardous Substances

Regulations: <http://www.legislation.gov.uk/uksi/2002/2677/contents/made>