



## PRESS RELEASE

### Low-dose, long-term exposure to Roundup causes disease in rats

**Brussels, 9 January 2017** – A study published today shows that low levels of exposure to the weed killer Roundup over a long period of time can cause liver disease in rats. The findings are likely to bring further public attention to the Roundup's controversial active ingredient, glyphosate.

The peer-reviewed paper is published in *Scientific Reports* entitled "Multiomics reveal non-alcoholic fatty liver disease in rats following chronic exposure to an ultra-low dose of Roundup herbicide". (1) The study is unique in that it is the first to show a causative link between consumption of Roundup at a "real world" environmental dose and a serious disease condition.

Cutting edge molecule profiling analyses were used to reveal that Roundup causes liver damage at doses permitted by regulators. Female rats were administered with an extremely low dose (2) of Roundup weed killer over a two-year period and found to suffer from non-alcoholic fatty liver disease (NAFLD). The dose selected was below what people are commonly exposed to in the everyday environment and 75,000 times below what is permitted by EU regulators. (2)

Dr Michael Antoniou, who is a member of the Gene Expression and Therapy Group at King's College London and one of the authors of the paper, says: "*The findings of our study are very worrying as they demonstrate for the first time a causative link between an environmentally relevant level of Roundup consumption over the long-term and a serious disease - namely non-alcoholic fatty liver disease. Our results also suggest that regulators should reconsider the safety evaluation of glyphosate-based herbicides.*"

Non-alcoholic fatty liver disease (NAFLD) is a common condition in humans. It occurs in at least one in five of the general population, and in the vast majority of people with type 2 diabetes, according to Dr Antoniou.

The Health and Environment Alliance (HEAL), one of a growing number of civil society actors, cancer charities and medical professionals, has repeatedly called for an end to the licensing of glyphosate.

"Glyphosate is already classified by IARC as a 'probable carcinogen' by the International Agency for Research on Cancer (IARC) of the World Health Organization. It is also described as a 'potential endocrine disrupting chemical'. This new study adds to evidence about the likely harm to human health from Roundup and other glyphosate based herbicides. Given people's unavoidable exposures from the massive increase in the use of these weed killers over the past 30 years, surely it is time to ban it on precautionary grounds?" says Génon K. Jensen, Executive Director, Health and Environment Alliance (HEAL).

#### The glyphosate controversy

In 2015, the International Agency for Research on Cancer (IARC) of the World Health Organization classified glyphosate as a "probable human carcinogen". (3) The ensuing scientific and public debate led the European Commission to announce that it would extend glyphosate's licence for 18 months rather than re-authorise for the previously anticipated period of 15 years, until Europe's own classification process for glyphosate is completed.

At the end of 2016, the European Chemicals Agency (ECHA) began to consider whether glyphosate should be classified as a human carcinogen under European harmonised classification and labelling law. Its Risk Assessment Committee (RAC) will continue discussions at its next meeting in March 2017. It expects to reach a final opinion on the proposed classification in June or September this year. (4) The legal deadline for the adoption of RAC's opinion is November 2017, after which it must still be officially adopted by a Commission committee composed of Member State representatives. (5)

Meanwhile, several EU member states have already taken action to curb the use of glyphosate. In July 2016, Malta's Environment Ministry asked the national pesticide regulator to implement "political direction given by the ministry towards a ban". (6) The French Environment Minister has told garden centres to stop sales of glyphosate to individuals unless a qualified vendor provides advice. Measures have also been introduced in the Netherlands and Denmark.

Before the Commission took its decision on glyphosate licensing, a petition signed by over 250,000 European citizens urged the Health and Food Safety Commissioner, Vytenis Andriukaitis, and responsible ministers of the member states "to decline the licence renewal of glyphosate". (7)

Contacts:

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Génon K. Jensen, Executive Director, Health & Environment Alliance (HEAL), E-mail: [genon@env-health.org](mailto:genon@env-health.org) Website: [www.env-health.org](http://www.env-health.org) Mobile phone: + 32 495 808732.

Notes for journalists

1. Mesnage R, Renney G, Séralini GE, Ward M, Antoniou MN. "Multiomics reveal non-alcoholic fatty liver disease in rats following chronic exposure to an ultra-low dose of Roundup herbicide" is published *Scientific Reports*. <http://www.nature.com/articles/srep39328> *Scientific Reports* is an online, open access journal from the publishers of *Nature*.
2. The results demonstrate that long-term consumption of an ultra-low, environmentally relevant dose of Roundup at a glyphosate daily intake level of only 4 nanograms per kilogram of body weight per day, which is 75,000 times below EU and 437,500 below US permitted levels, results in non-alcoholic fatty liver disease (NAFLD).
3. Lancet Oncology, Carcinogenicity of tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate, 20 March 2015, [http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(15\)70134-8/abstract](http://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(15)70134-8/abstract),
4. Chemical Watch <https://chemicalwatch.com/51828/echa-committee-to-provide-opinion-on-carcinogenicity-of-glyphosate>
5. ECHA <https://echa.europa.eu/-/echa-s-role-in-assessing-glyphosate>
6. Times of Malta, <http://www.timesofmalta.com/articles/view/20160715/local/malta-set-to-ban-probable-carcinogenic-weedkiller.618884>
7. Petition, Stop glyphosate, <https://act.wemove.eu/campaigns/stop-glyphosate>

*The Health and Environment Alliance (HEAL) is a leading European not-for-profit organisation addressing how the environment affects health in the European Union (EU). With the support of more than 70 member organisations, HEAL brings independent expertise and evidence from the health community to different decision-making processes. Our broad alliance represents health professionals, not-for-profit health insurers, doctors, nurses, cancer and asthma groups, citizens, women's groups, youth groups, environmental NGOs, scientists and public health research institutes. Members include international and Europe-wide organisations as well as national and local groups. Website: [www.env-health.org](http://www.env-health.org). Follow HEAL on [Facebook](#) and Twitter [@HealthandEnv](#) [@EDCFree](#) and [@CHM\\_HEAL](#)*