

Maria J. Doa,
Director, Chemical Control Division, Office of Pollution Prevention and Toxics
Environmental Protection Agency
1200 Pennsylvania Ave. NW.
Washington, DC 20460-0001

January 17, 2017

RE: Docket ID EPA-HQ-OPPT-2016-0658-0001
Meetings: New Chemicals Review Program under Amended Toxic Substances Control Act

Dear Director Doa,

The Endocrine Society appreciates the opportunity to comment on the implementation of the New Chemicals Review Program under the amended Toxic Substances Control Act (TSCA). Founded in 1916, the Endocrine Society is the world's oldest, largest, and most active organization dedicated to the understanding of hormone systems and the clinical care of patients with endocrine diseases and disorders. The Society's membership of over 18,000 includes researchers who are making significant contributions to our understanding of the effects of exposures to manufactured chemicals that interfere with hormone systems – an area of science investigating endocrine-disrupting chemicals (EDCs). We maintain that, to effectively protect the public from harms due to exposures to EDCs, it is appropriate and necessary to interpret the available evidence using the latest scientific literature to truly capture the effects of hormones that we know act through unique and complex mechanisms that are not well captured by current regulatory assays. The Endocrine Society therefore supports measures taken by the EPA to quickly and effectively implement the reforms to the New Chemicals Program mandated by the Frank R. Lautenberg Chemical Safety in the 21st Century Act (CSIA) with the use of endocrine experts who possess a thorough knowledge about what hormones do and how they do it.

As described in the Endocrine Society's second Scientific Statement on EDCs, there is strong mechanistic, experimental, animal, and epidemiological evidence for endocrine disruption in the development of obesity, diabetes, reproductive health issues, cancer, and neurodevelopmental issues¹. Scientific knowledge on EDCs has developed rapidly in recent decades and characteristics of EDCs demonstrate the need to carefully evaluate chemicals for safety before they enter the market:

- Certain populations, such as pregnant women and fetuses are particularly vulnerable to exposures to EDCs. Strong evidence from basic science, clinical studies and epidemiological

¹ Gore, A.C., et al., "Executive Summary to EDC-2: The Endocrine Society's Second Scientific Statement on Endocrine-Disrupting Chemicals" *Endocrine Reviews*, December 2015, 36(6):593– 602



research demonstrate that exposure to EDCs during preconception and pregnancy can raise the lifetime risk of many diseases².

- Childhood and puberty are also increasingly being recognized as sensitive periods of development, with rapidly developing endocrine systems vulnerable to EDC exposures.
- EDCs can have multi- and trans-generational effects through the alteration of germ cells during development. Exposure of pregnant women to EDCs will result in exposure of the fetus through placental transfer, and exposure can continue in the newborn through breast-feeding.
- The effects of EDCs typically are not detected until years after the initial exposure occurs.
- Traditional guideline studies to assess chemicals examine effects at high doses, relative to human exposure, and adverse effects must increase proportionally with dose. However, many EDC effects occur at low doses, and these effects may differ from effects (or lack thereof) at high doses.
- Traditional guideline studies are not designed to be sensitive for endocrine effects and do not capture important adverse outcomes, such as altered development or losses in intelligence that occur during development but manifest in adulthood.
- Mixture effects are not adequately captured by traditional guideline studies.

As recognized by international scientific and intergovernmental organizations, such as WHO/UNEP and Project TENDR, EDCs are a class of chemicals for which significant deficiencies in regulatory testing persist³⁴. The regulatory landscape under TSCA prior to CSIA failed to consider the latest scientific studies from the world's top researchers into the mechanisms of EDC actions and impacts in humans. Consequently, humans are now continuously exposed to chemicals with uncertain effects, including harms due to endocrine-disrupting effects. This is important because recent analyses – such as the “Late Lessons” project of the European Environment Agency – demonstrate that as new data rise, the “safe” exposure level estimated by risk assessments is routinely lowered⁵. Furthermore, human health harms due to inadequate testing and regulation of EDCs have extraordinary economic costs to society.

² Heindel, J.J., et al., “Review of developmental origins of health and disease publications in environmental epidemiology.” *Reproductive Toxicology*, November 18, 2016, pii: S0890-6238(16)30413-0.

³ World Health Organization, 2012. United Nations Environment Programme (WHO-UNEP), Bergman, A., Heindel, J.J., Jobling, S., Kidd, K.A., Zoeller, R.T. (Eds.), State of the Science of Endocrine Disrupting Chemicals 2012. Summary for Decision-Makers. <http://www.who.int/ceh/publications/endocrine/en/index.html> Accessed January 9, 2017.

⁴ TENDR Statement Authors. “Project TENDR: Targeting Environmental Neuro-Developmental Risks. The TENDR Consensus Statement.” *Environ Health Perspect*, July 2016, 124(7), A118-22.

⁵ “Late lessons from early warnings: science, precaution, innovation” European Environment Agency; (2013). <http://www.eea.europa.eu/publications/late-lessons-2> Accessed January 3, 2016.



Health effects from EDC exposures are estimated to cost the European Union €157 billion per year⁶, while the costs to the United States may exceed \$340 billion⁷.

While the CISA did not fully address the reforms needed to ensure protection from EDCs, we applaud the new actions by EPA to make an affirmative safety finding for new chemicals as mandated under the CSIA. Specifically, by identifying new chemicals for which the agency lacks sufficient information to appropriately evaluate the chemical, or has found information suggesting that new chemicals may present unreasonable risks under intended or unintended conditions of use, the EPA can ascertain when additional testing and scientific knowledge may be needed before making a final determination. Given the emerging scientific knowledge regarding EDCs as well as the documented harms associated with exposure to EDCs currently in use, the Endocrine Society strongly supports these necessary efforts to guarantee that such potentially hazardous chemicals have undergone appropriate testing to ensure safety prior to use.

Thank you for considering the Endocrine Society's comments. If we can be of any further assistance, please contact Joseph Laakso, PhD, Associate Director of Science Policy at jlaakso@endocrine.org.

Sincerely,

Henry Kronenberg, MD
President
Endocrine Society

⁶ Trasande, L., et al., "Estimating burden and disease costs of exposure to endocrine-disrupting chemicals in the European union." *J Clin Endocrinol Metab*. 2015 Apr;100(4):1245-55.

⁷ Attina, T.M., et al., "Exposure to endocrine-disrupting chemicals in the USA: a population-based disease burden and cost analysis." *Lancet Diabetes Endocrinol*, 2016 Dec;4(12):996-1003.